

FULL RESERVE STUDY

Town of St. Michaels



St. Michaels, Maryland

November 16, 2016



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1. RESERVE STUDY EXECUTIVE SUMMARY

Client: Town of St. Michaels

Location: St. Michaels, Maryland

Reference: 161526

Property Basics: Town of St. Michaels is a municipality which is responsible for the maintenance and replacement of the Administration Building, Boy Scout Cabin, Police Station, Town Shop Public Works and partial maintenance and replacement of a Rental Property. The town was incorporated in 1804 and contains asphalt pavement streets, parking areas and nature trail, bridges, playgrounds, various vehicles and maintenance equipment, and water treatment and distribution infrastructure.

Reserve Components Identified: 87 General Fund Reserve Components and 16 Water Fund Reserve Components.

Inspection Date: November 16, 2016.

General Fund Funding Goal: The Funding Goal of this Reserve Study is to maintain reserves above an adequate, not excessive threshold during one or more years of significant expenditures. Our recommended General Fund Funding Plan does not recognize a critical threshold funding year. The General Fund Reserve Funding Plan recommends 2047 year end accumulated reserves of approximately \$3,796,000. We judge this amount of accumulated reserves in 2047 desirable or necessary, to fund the likely subsequent total replacement of the asphalt pavement streets and nature trail after 2047. Future replacement costs beyond the next 30 years for the subsequent total replacement of the asphalt pavement streets and nature trail are likely to more than double the current cost of replacement. These future needs, although beyond the limit of the Cash Flow Analysis of this Reserve Study, are reflected in the amount of accumulated 2047 year end reserves.

Water Fund Funding Goal: The Funding Goal of this Reserve Study is to maintain reserves above an adequate, not excessive threshold during one or more years of significant expenditures. Our recommended Water Fund Funding Plan does not recognize a critical threshold funding year. The Water Fund Reserve Funding Plan recommends 2047 year end accumulated reserves of approximately \$1,518,100. We judge this amount of accumulated reserves in 2047 desirable or necessary, to fund the likely replacement of the North Talbot Street water tower after 2047. Future replacement costs beyond the next 30 years for the North Talbot Street water tower are likely to more than double the current cost of replacement, now estimated at approximately \$910,000. These future needs, although beyond the limit of the Cash Flow Analysis of this Reserve Study, are reflected in the amount of accumulated 2047 year end reserves.

Cash Flow Method: We use the Cash Flow Method to compute the Reserve Funding Plans. This method offsets future variable Reserve Expenditures with existing and future stable levels of reserve funding. Our application of this method also considers:

- current and future local costs of replacement
- 1.20% annual rate of return on invested reserves
- 2.0% future Inflation Rate for estimating Future Replacement Costs

Sources for Local Costs of Replacement: Our proprietary database, historical costs and published sources, i.e., R.S. Means, Incorporated.

Cash Status of General Fund Reserve Fund: \$8,574,049 as of June 30, 2016.

Cash Status of Water Fund Reserve Fund: \$329,076 as of June 30, 2016.

Recommended General Fund Reserve Funding: We recommend the Town adopt a General Fund reserve budget of \$263,000 in 2018¹. Afterwards, the Town should budget gradual annual increases in reserve funding that in part consider the effects of inflation through 2047, the limit of this study's Cash Flow Analysis.

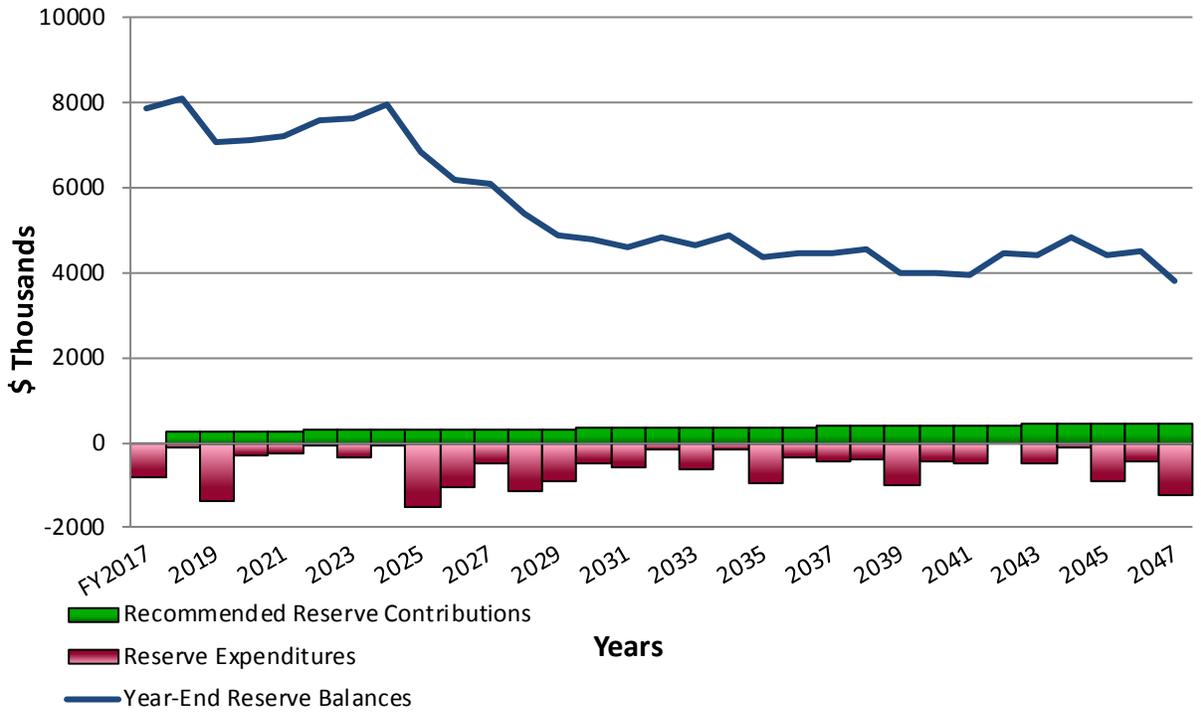
Recommended Water Fund Reserve Funding: We recommend the Town adopt a Water Fund reserve budget of \$112,000 in 2018. Afterwards, the Town should budget gradual annual increases in reserve funding that in part consider the effects of inflation through 2047, the limit of this study's Cash Flow Analysis.

Certification: This *Full Reserve Study* exceeds the Community Associations Institute (CAI) and the Association of Professional Reserve Analysts (APRA) standards fulfilling the requirements of a "Level I Full Reserve Study."

¹ The Fiscal Year (FY 2017) for Town of St. Michaels begins July 1, 2017 and ends June 30, 2018. For brevity, we refer to the Fiscal Year by its ending year, i.e. Fiscal Year 2017-18 is FY 2018 or simply 2018.

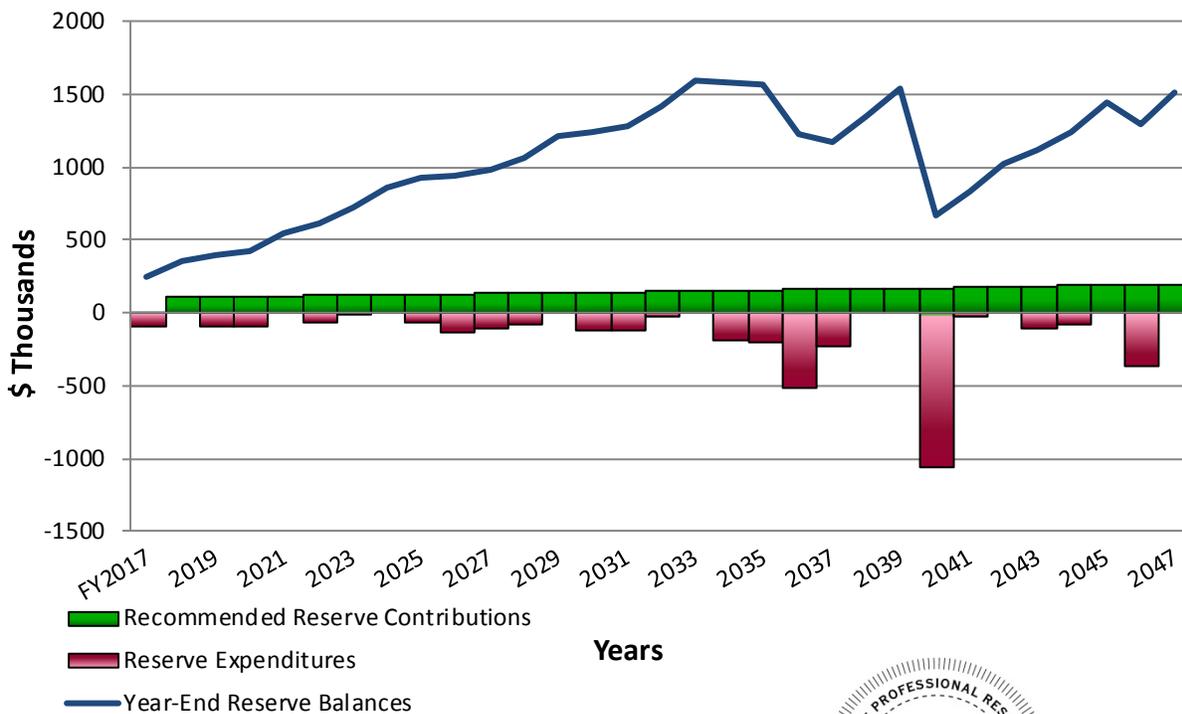
Town of St. Michaels
Recommended General Fund Reserve Funding Table and Graph

Year	Reserve Contributions (\$)	Reserve Balances (\$)	Year	Reserve Contributions (\$)	Reserve Balances (\$)	Year	Reserve Contributions (\$)	Reserve Balances (\$)
2018	263,000	8,114,400	2028	320,700	5,369,965	2038	390,900	4,539,991
2019	268,300	7,087,216	2029	327,100	4,875,713	2039	398,700	3,969,185
2020	273,700	7,131,282	2030	333,600	4,769,187	2040	406,700	3,997,956
2021	279,200	7,226,164	2031	340,300	4,596,464	2041	414,800	3,968,260
2022	284,800	7,593,834	2032	347,100	4,833,037	2042	423,100	4,441,518
2023	290,500	7,609,184	2033	354,000	4,636,205	2043	431,600	4,425,918
2024	296,300	7,951,192	2034	361,100	4,901,564	2044	440,200	4,825,711
2025	302,200	6,839,019	2035	368,300	4,366,154	2045	449,000	4,435,421
2026	308,200	6,195,759	2036	375,700	4,468,951	2046	458,000	4,512,416
2027	314,400	6,100,969	2037	383,200	4,471,081	2047	467,200	3,795,954



Recommended Water Fund Reserve Funding Table and Graph

Year	Reserve Contributions (\$)	Reserve Balances (\$)	Year	Reserve Contributions (\$)	Reserve Balances (\$)	Year	Reserve Contributions (\$)	Reserve Balances (\$)
2018	112,000	362,139	2028	136,500	1,059,405	2038	166,400	1,352,585
2019	114,200	392,405	2029	139,200	1,212,153	2039	169,700	1,539,534
2020	116,500	422,501	2030	142,000	1,244,620	2040	173,100	669,285
2021	118,800	547,084	2031	144,800	1,283,767	2041	176,600	833,132
2022	121,200	608,934	2032	147,700	1,423,387	2042	180,100	1,024,310
2023	123,600	729,253	2033	150,700	1,592,072	2043	183,700	1,120,396
2024	126,100	864,861	2034	153,700	1,584,085	2044	187,400	1,241,832
2025	128,600	933,889	2035	156,800	1,563,991	2045	191,100	1,448,981
2026	131,200	944,834	2036	159,900	1,225,546	2046	194,900	1,302,458
2027	133,800	985,312	2037	163,100	1,171,133	2047	198,800	1,518,080



Respectfully submitted on January 27, 2017 by
RESERVE ADVISORS, INC.



Alan M. Ebert, PRA¹, RS², Director of Quality Assurance
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 Visual Inspection and Report by: Nicholas R. Julia, RS, Stephen E. Breski, RS and Dixon P. Drumheller



¹PRA (Professional Reserve Analyst) is the professional designation of the Association of Professional Reserve Analysts. Learn more about APRA at <http://www.apra-usa.com>.

²RS (Reserve Specialist) is the reserve provider professional designation of the Community Associations Institute (CAI) representing America's more than 300,000 condominium, cooperative and homeowners associations.

2. RESERVE STUDY REPORT

At the direction of the Board that recognizes the need for proper reserve planning, we have conducted a *Full Reserve Study* of

Town of St. Michaels

St. Michaels, Maryland

and submit our findings in this report. The effective date of this study is the date of our visual, noninvasive inspection, November 16, 2016.

We present our findings and recommendations in the following report sections and spreadsheets:

- **Identification of Property** - Segregates all property into several areas of responsibility for repair or replacement
- **Reserve Expenditures** - Identifies reserve components and related quantities, useful lives, remaining useful lives and future reserve expenditures during the next 30 years
- **Reserve Funding Plans** - Presents the recommended Reserve Contributions and year-end Reserve Balances for the next 30 years
- **Condition Assessment** - Describes the reserve components, includes photographic documentation of the condition of various property elements, describes our recommendations for repairs or replacement, and includes detailed solutions and procedures for replacements for the benefit of current and future board members
- **Methodology** - Lists the national standards, methods and procedures used, financial information relied upon for the Financial Analysis of the Reserve Study
- **Definitions** - Contains definitions of terms used in the Reserve Study, consistent with national standards
- **Professional Service Conditions** - Describes Assumptions and Professional Service Conditions
- **Credentials and Resources**

IDENTIFICATION OF PROPERTY



Town of St. Michaels is a municipality which is responsible for the maintenance and replacement of the Administration Building, Boy Scout Cabin, Police Station, Town Shop Public Works and partial maintenance and replacement of a Rental Property. The town was incorporated in 1804 and contains asphalt pavement streets, parking areas and nature trail, bridges, playgrounds, various vehicles and maintenance equipment, and water treatment and distribution infrastructure. We identify 87 major General Fund reserve components and 16 major Water Fund reserve components that are likely to require capital repair or replacement during the next 30 years.

Our investigation includes Reserve Components or property elements as set forth in your Declaration. Our analysis begins by segregating the property elements into several areas of responsibility for repair and replacement. Our process of identification helps assure that future

boards and the management team understand whether reserves, the operating budget or Town fund certain replacements and assists in preparation of the annual budget. We derive these segregated classes of property from our review of the information provided by the Town and through conversations with Administration. These classes of property include:

- Reserve Components
- Long-Lived Property Elements
- Operating Budget Funded Repairs and Replacements
- Property Maintained by Others

We advise the Board conduct an annual review of these classes of property to confirm its policy concerning the manner of funding, i.e., from reserves or the operating budget.

The Reserve Study identifies Reserve Components as set forth in your Declaration or which were identified as part of your request for proposed services. Reserve Components are defined by CAI as property elements with:

- Town of St. Michaels responsibility
- Limited useful life expectancies
- Predictable remaining useful life expectancies
- Replacement cost above a minimum threshold

Long-Lived Property Elements may not have predictable Remaining Useful Lives or their replacement may occur beyond the 30-year scope of the study. The operating budget should fund infrequent repairs. Funding untimely or unexpected replacements from reserves will necessitate increases to Reserve Contributions. Periodic updates of this Reserve Study will help determine the merits of adjusting the Reserve Funding Plan. We identify the following Long-Lived Property Elements as excluded from reserve funding at this time.

- Backwash Tanks, Arsenic Treatment Systems, Replacement (2016)
- Electrical Systems, Common and Town Buildings
- Foundations, Town Buildings
- Parking Meters (2005)
- Structural Frames, Town Buildings

- Water Tower, North Talbot Street, Total Replacement
- Wells

The operating budget provides money for the repair and replacement of certain Reserve Components. Operating Budget Funded Repairs and Replacements relate to:

- General Maintenance to the Common Elements
- Expenditures less than \$5,000 (These relatively minor expenditures have a limited effect on the recommended Reserve Contributions.)
- Backwash Tanks, Maintenance, Arsenic Treatment Systems
- Bike Racks
- Bulkheads (Excluding the bulkhead near Honeymoon Bridge; The remaining bulkheads are funded through means outside of Reserves.)
- Dock and Kayak Launch, Back Creek Park (Renovations will be completed through means outside of Reserves.)
- Fences, Chain Link, Split Rail Wood, and Vinyl
- Flag Poles
- Furnishings and Fixtures, Interim Replacements, Town Buildings
- Heating, Ventilating and Air Conditioning (HVAC) Units, Heat Pumps, Air Handling Units, Heaters and Ductless Systems, Town Buildings and Pump Houses (We assume replacement as needed in lieu of an aggregate replacement of all the HVAC equipment as a single event.)
- Landscape
- Light Fixtures, Exterior, Town Buildings
- Masonry, Inspections and Repairs, Town Shop Public Works Garage, Pump Houses and Arsenic Treatment Buildings,
- Office Equipment, Town Buildings
- Paint Finishes, Touch Up
- Pipes, Interior Building, Domestic Water, Sanitary Waste, Gas Supply, Building Heating and Cooling, Town Buildings
- Pumps Less Than Five-HP (horsepower) (Including Sump Pumps)
- Railings, Metal, Town Buildings
- Rest Rooms, Portable
- Signage, Nature Trail, Street Identification and Traffic Management
- Software, Police Vehicular Equipment and Town Buildings
- Storage Tanks, Chemicals, Arsenic Treatment Systems
- Valves, Small Diameter (we assume replacement as needed in lieu of an aggregate replacement of all the small diameter valves as a single event)
- Water Heaters, Town Buildings
- Water Towers, Power Washing
- Other Repairs normally funded through the Operating Budget

Certain items have been designated as the responsibility of others to repair or replace.

Property Maintained by Others relates to:

- Community Center (Private Entity)
- Fire Station (Talbot County)
- Homes, Commercial Properties and Lots (Residents and Commercial Unit Owners)
- Interior Renovations, Rental Property Building (Long and Foster Real Estate, Current Tenant)
- Marinas and Docks (Multiple Private Entities)
- Pipes, Subsurface Utilities, Sewer (Talbot County)
- Sidewalks (Residents and Commercial Unit Owners)
- Sewer Pump Station, Muskrat Park (Talbot County)

3. RESERVE EXPENDITURES and FUNDING PLANS

The tables following this introduction present:

Reserve Expenditures

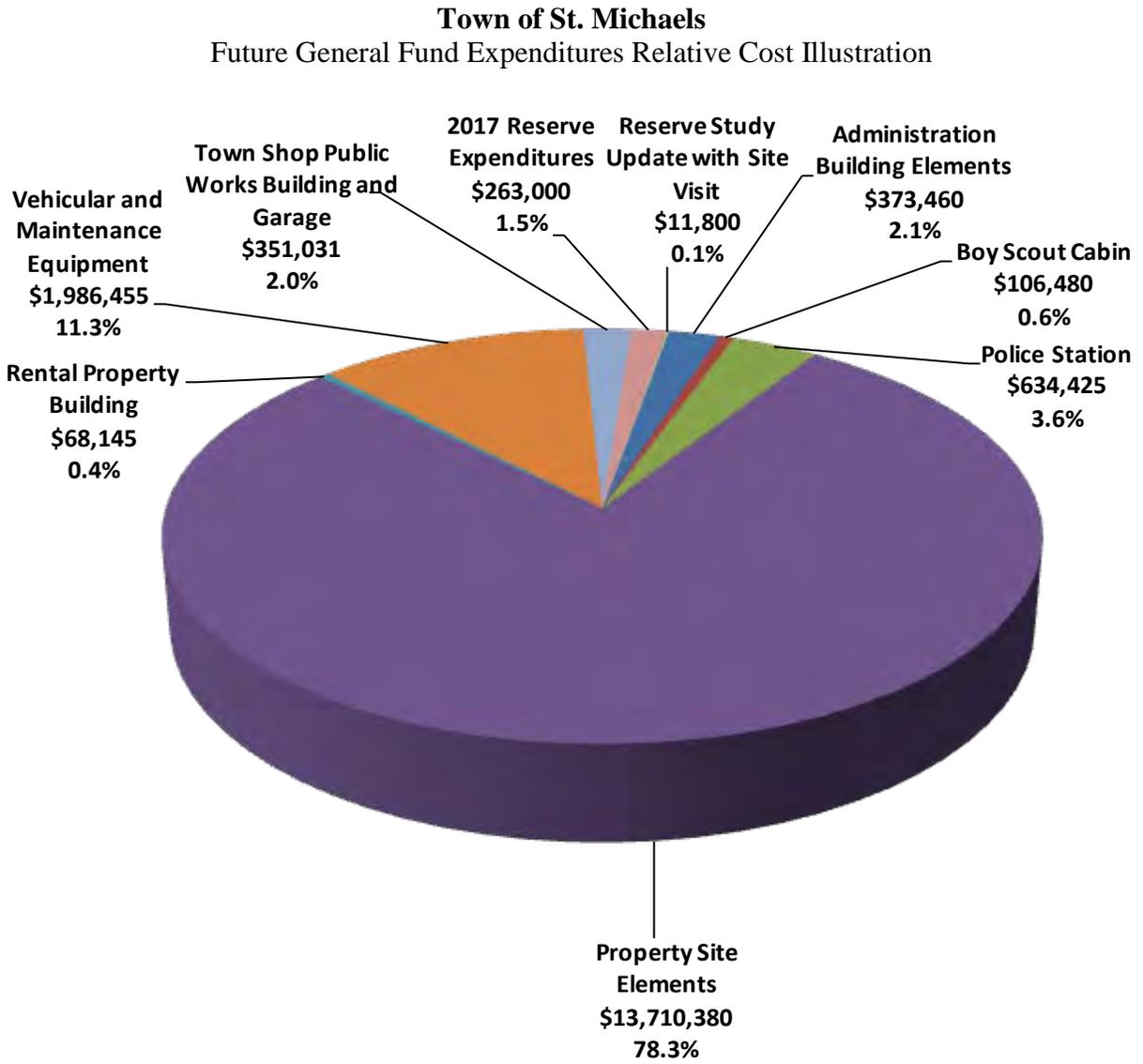
- Line item numbers
- Total quantities
- Quantities replaced per phase (in a single year)
- Reserve component inventories
- Estimated first year of event (i.e., replacement, application, etc.)
- Life analysis showing
 - useful life
 - remaining useful life
- Unit cost of replacement
- 2017 local cost of replacement
- Total future costs of replacement anticipated during the next 30 years
- Schedule of estimated future costs for each reserve component including inflation

Reserve Funding Plans

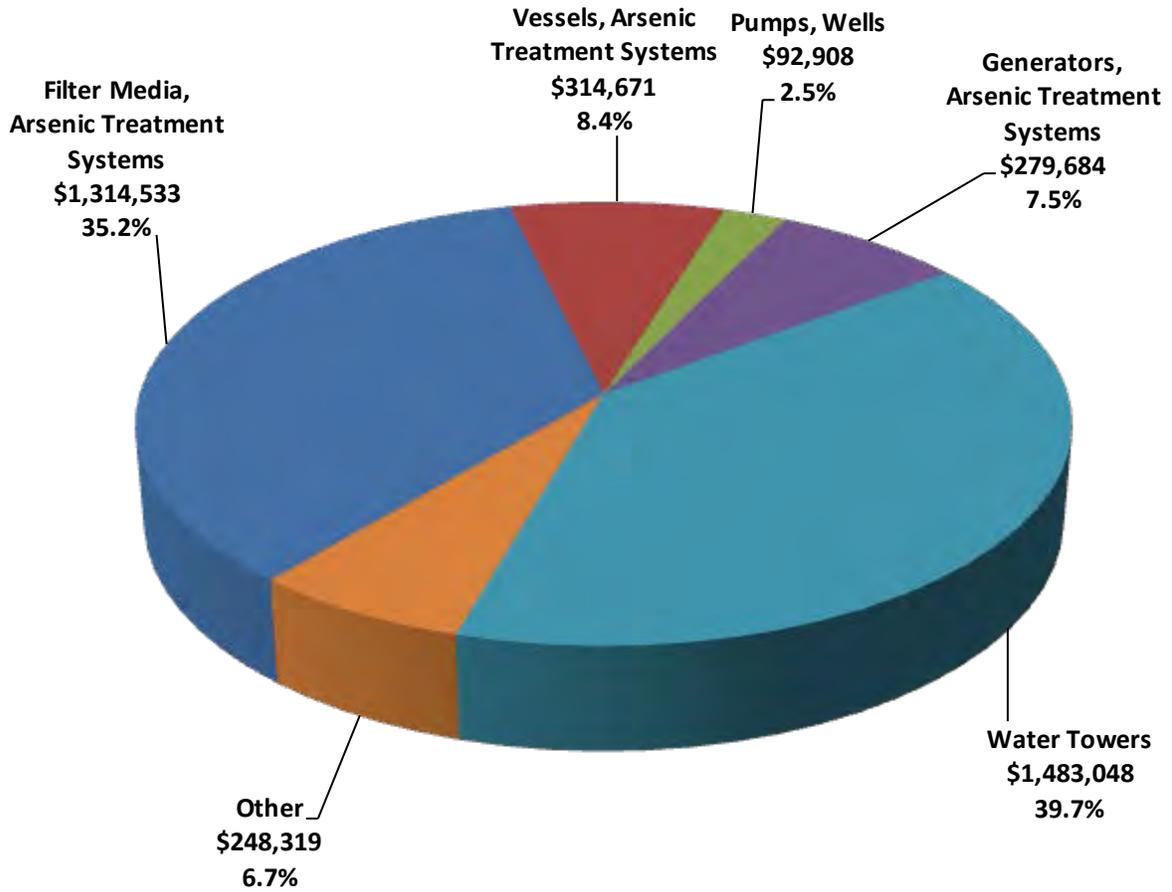
- Reserves at the beginning of each year
- Total recommended reserve contributions
- Estimated interest earned from invested reserves
- Anticipated expenditures by year
- Anticipated reserves at year end

Financial statements prepared by your town, by you or others might rely in part on information contained in this section. For your convenience, we have provided an electronic data file containing the tables of *Reserve Expenditures* and *Reserve Funding Plans*.

The following charts illustrate the relative importance of the categories noted in *General Fund Reserve Expenditures* and *Water Fund Reserve Expenditures* and relative funding during the next 30 years.



Future Water Fund Expenditures Relative Cost Illustration



General Fund
RESERVE EXPENDITURES

Town of St. Michaels
St. Michaels, Maryland

Explanatory Notes:

- 1) **2.0%** is the estimated future Inflation Rate for estimating Future Replacement Costs.
- 2) FY2017 is Fiscal Year beginning July 1, 2016 and ending June 30, 2017.

Line Item	Total Quantity	Per Phase Quantity	Units	Reserve Component Inventory	Estimated 1st Year of Event	Life Analysis, Years		Costs, \$				RUL = 0 FY2017	1 2018	2 2019	3 2020	4 2021	5 2022	6 2023	7 2024	8 2025	9 2026	10 2027	11 2028	12 2029	13 2030	14 2031	15 2032		
						Useful	Remaining	Unit (2017)	Per Phase (2017)	Total (2017)	30-Year Total (Inflated)																		
Administration Building Elements																													
1.105	1	1	Each	Boiler, Domestic Hot Water	2018	15 to 20	1	6,000.00	6,000	6,000	14,861		6,120																
1.201	1	1	Allowance	Crawlspace, Mold Remediation and Structural Repairs	2017	N/A	0	16,000.00	16,000	16,000	16,000	16,000																	
1.411	4	1	Allowance	E-Tix Communication System, Software	2023	6 to 8	6	11,000.00	11,000	44,000	63,833						12,388										14,514		
1.450	4	1	Allowance	Furnishings and Fixtures, Phased (Incl. Limited Appliances)	2020	to 20	3	14,500.00	14,500	58,000	119,954						15,388			16,989							18,757		
1.500	1	1	Allowance	Interior, Renovation, Complete	2030	to 20	13	29,000.00	29,000	29,000	37,515																37,515		
1.510	1	1	Allowance	Interior, Renovation, Partial	2020	to 10	3	16,000.00	16,000	16,000	42,209						16,979												
1.680	24	24	Squares	Roof Assembly, Asphalt Shingles	2029	15 to 20	12	440.00	10,560	10,560	32,521																13,393		
1.820	1	1	Allowance	Walls, Masonry and Wood Siding, Inspections, Repairs and Partial Paint Finishes (Incl. Masonry Stoops)	2018	8 to 12	1	8,000.00	8,000	8,000	30,232		8,160												9,947				
1.980	280	280	Square Feet	Windows and Doors	2029	to 40	12	46.00	12,880	12,880	16,335																16,335		
Boy Scout Cabin Elements																													
2.201	1	1	Allowance	Chimney, Restoration	2020	15 to 20	3	9,000.00	9,000	9,000	23,743						9,551												
2.500	1	1	Allowance	Interior, Renovation	2019	to 20	2	19,000.00	19,000	19,000	49,142			19,768															
2.680	11	11	Squares	Roof, Asphalt Shingles	2032	15 to 20	15	410.00	4,510	4,510	6,070																	6,070	
2.960	1,080	1,080	Square Feet	Walls, Wood Siding, Remaining	2018	to 35	1	18.00	19,440	19,440	19,829		19,829																
2.980	140	140	Square Feet	Windows and Doors	2026	to 40	9	46.00	6,440	6,440	7,696									7,696									
Police Station																													
3.120	190	190	Square Feet	Decks and Ramp, Wood (Incl. Railings)	2028	20 to 25	11	48.00	9,120	9,120	11,340																11,340		
3.157	1	1	Allowance	Finger Scan System	2024	8 to 10	7	11,000.00	11,000	11,000	46,815						12,636												
3.450	4	1	Allowance	Furnishings and Fixtures, Phased (Incl. Limited Appliances)	2020	to 20	3	11,500.00	11,500	46,000	95,135						12,204			13,474								14,876	
3.500	1	1	Allowance	Interior, Renovation, Complete	2030	to 20	13	40,000.00	40,000	40,000	51,744																	51,744	
3.510	1	1	Allowance	Interior, Renovation, Partial	2020	to 10	3	18,500.00	18,500	18,500	48,805						19,632												
3.601	1	1	Allowance	K-9 Training	2023	5 to 7	6	15,000.00	15,000	15,000	84,188								16,892								19,404		
3.611	1	1	Allowance	Phone System	2018	5 to 7	1	8,000.00	8,000	8,000	54,875		8,160							9,373								10,767	
3.621	1	1	Allowance	Radios	2020	15 to 20	3	59,000.00	59,000	59,000	153,824						62,611												
3.680	25	25	Squares	Roof Assembly, Asphalt Shingles	2036	15 to 20	19	440.00	11,000	11,000	16,025																		
3.820	1	1	Allowance	Security System	2022	to 15	5	5,000.00	5,000	5,000	12,950						5,520												
3.860	2,950	2,950	Square Feet	Walls, Vinyl Siding	2047	to 40	30	6.00	17,700	17,700	32,061																		
3.980	320	320	Square Feet	Windows and Doors	2047	to 40	30	46.00	14,720	14,720	26,663																		
Town Shop Public Works Building and Garage																													
4.121	5	5	Each	Doors, Garage, Metal Sectional	2019	10 to 15	2	4,500.00	22,500	22,500	95,053			23,409															
4.221	1	1	Each	Gas Pump	2033	15 to 20	16	15,000.00	15,000	15,000	20,592																		
4.321	1	1	Each	Generator, 30-kW (Incl. Transfer Switch)	2027	25 to 35	10	48,000.00	48,000	48,000	58,512															58,512			
4.500	1	1	Allowance	Interior, Renovation (Incl. Furnishings and Fixtures)	2019	to 20	2	11,000.00	11,000	11,000	28,450			11,444															
4.680	50	50	Squares	Roof Assembly, Flat	2018	15 to 20	1	850.00	42,500	42,500	107,766		43,350																
4.801	1	1	Allowance	Storage Tanks, Fuel	2030	25 to 35	13	22,000.00	22,000	22,000	28,459																	28,459	
4.980	260	260	Square Feet	Windows and Doors	2018	to 40	1	46.00	11,960	11,960	12,199		12,199																

General Fund
RESERVE EXPENDITURES

Town of St. Michaels
St. Michaels, Maryland

Line Item	Total Quantity	Per Phase Quantity	Units	Reserve Component Inventory	Estimated 1st Year of Event	Life Analysis, Years		Costs, \$				16 2033	17 2034	18 2035	19 2036	20 2037	21 2038	22 2039	23 2040	24 2041	25 2042	26 2043	27 2044	28 2045	29 2046	30 2047	
						Useful	Remaining	Unit (2017)	Per Phase (2017)	Total (2017)	30-Year Total (Inflated)																
Administration Building Elements																											
1.105	1	1	Each	Boiler, Domestic Hot Water	2018	15 to 20	1	6,000.00	6,000	6,000	14,861				8,741												
1.201	1	1	Allowance	Crawlspace, Mold Remediation and Structural Repairs	2017	N/A	0	16,000.00	16,000	16,000	16,000																
1.411	4	1	Allowance	E-Tix Communication System, Software	2023	6 to 8	6	11,000.00	11,000	44,000	63,833						17,006										19,925
1.450	4	1	Allowance	Furnishings and Fixtures, Phased (Incl. Limited Appliances)	2020	to 20	3	14,500.00	14,500	58,000	119,954			20,710				22,865									25,245
1.500	1	1	Allowance	Interior, Renovation, Complete	2030	to 20	13	29,000.00	29,000	29,000	37,515																
1.510	1	1	Allowance	Interior, Renovation, Partial	2020	to 10	3	16,000.00	16,000	16,000	42,209								25,230								
1.680	24	24	Squares	Roof Assembly, Asphalt Shingles	2029	15 to 20	12	440.00	10,560	10,560	32,521																19,128
1.820	1	1	Allowance	Walls, Masonry and Wood Siding, Inspections, Repairs and Partial Paint Finishes (Incl. Masonry Stoops)	2018	8 to 12	1	8,000.00	8,000	8,000	30,232						12,125										
1.980	280	280	Square Feet	Windows and Doors	2029	to 40	12	46.00	12,880	12,880	16,335																
Boy Scout Cabin Elements																											
2.201	1	1	Allowance	Chimney, Restoration	2020	15 to 20	3	9,000.00	9,000	9,000	23,743								14,192								
2.500	1	1	Allowance	Interior, Renovation	2019	to 20	2	19,000.00	19,000	19,000	49,142								29,374								
2.680	11	11	Squares	Roof, Asphalt Shingles	2032	15 to 20	15	410.00	4,510	4,510	6,070																
2.960	1,080	1,080	Square Feet	Walls, Wood Siding, Remaining	2018	to 35	1	18.00	19,440	19,440	19,829																
2.980	140	140	Square Feet	Windows and Doors	2026	to 40	9	46.00	6,440	6,440	7,696																
Police Station																											
3.120	190	190	Square Feet	Decks and Ramp, Wood (Incl. Railings)	2028	20 to 25	11	48.00	9,120	9,120	11,340																
3.157	1	1	Allowance	Finger Scan System	2024	8 to 10	7	11,000.00	11,000	11,000	46,815		15,403														18,776
3.450	4	1	Allowance	Furnishings and Fixtures, Phased (Incl. Limited Appliances)	2020	to 20	3	11,500.00	11,500	46,000	95,135			16,425					18,134								20,022
3.500	1	1	Allowance	Interior, Renovation, Complete	2030	to 20	13	40,000.00	40,000	40,000	51,744																
3.510	1	1	Allowance	Interior, Renovation, Partial	2020	to 10	3	18,500.00	18,500	18,500	48,805								29,173								
3.601	1	1	Allowance	K-9 Training	2023	5 to 7	6	15,000.00	15,000	15,000	84,188					22,289											25,603
3.611	1	1	Allowance	Phone System	2018	5 to 7	1	8,000.00	8,000	8,000	54,875								12,368								14,207
3.621	1	1	Allowance	Radios	2020	15 to 20	3	59,000.00	59,000	59,000	153,824																91,213
3.680	25	25	Squares	Roof Assembly, Asphalt Shingles	2036	15 to 20	19	440.00	11,000	11,000	16,025				16,025												
3.820	1	1	Allowance	Security System	2022	to 15	5	5,000.00	5,000	5,000	12,950					7,430											
3.860	2,950	2,950	Square Feet	Walls, Vinyl Siding	2047	to 40	30	6.00	17,700	17,700	32,061																32,061
3.980	320	320	Square Feet	Windows and Doors	2047	to 40	30	46.00	14,720	14,720	26,663																26,663
Town Shop Public Works Building and Garage																											
4.121	5	5	Each	Doors, Garage, Metal Sectional	2019	10 to 15	2	4,500.00	22,500	22,500	95,053	30,888															40,756
4.221	1	1	Each	Gas Pump	2033	15 to 20	16	15,000.00	15,000	15,000	20,592	20,592															
4.321	1	1	Each	Generator, 30-kW (Incl. Transfer Switch)	2027	25 to 35	10	48,000.00	48,000	48,000	58,512																
4.500	1	1	Allowance	Interior, Renovation (Incl. Furnishings and Fixtures)	2019	to 20	2	11,000.00	11,000	11,000	28,450								17,006								
4.680	50	50	Squares	Roof Assembly, Flat	2018	15 to 20	1	850.00	42,500	42,500	107,766								64,416								
4.801	1	1	Allowance	Storage Tanks, Fuel	2030	25 to 35	13	22,000.00	22,000	22,000	28,459																
4.980	260	260	Square Feet	Windows and Doors	2018	to 40	1	46.00	11,960	11,960	12,199																

General Fund
RESERVE EXPENDITURES

Town of St. Michaels
St. Michaels, Maryland

Explanatory Notes:

- 1) **2.0%** is the estimated future Inflation Rate for estimating Future Replacement Costs.
- 2) FY2017 is Fiscal Year beginning July 1, 2016 and ending June 30, 2017.

Line Item	Total Quantity	Per Phase Quantity	Units	Reserve Component Inventory	Estimated 1st Year of Event	Life Analysis, Years		Costs, \$				RUL = 0 FY2017	1 2018	2 2019	3 2020	4 2021	5 2022	6 2023	7 2024	8 2025	9 2026	10 2027	11 2028	12 2029	13 2030	14 2031	15 2032		
						Useful	Remaining	Unit (2017)	Per Phase (2017)	Total (2017)	30-Year Total (Inflated)																		
Rental Property Building (Exterior Elements Only)																													
5.280	26	26	Squares	Roof Assembly, Asphalt Shingles	2019	15 to 20	2	440.00	11,440	11,440	28,901		11,902																
5.820	1	1	Allowance	Walls, Masonry and Wood Siding, Inspections, Repairs and Partial Paint Finishes (Incl. Masonry Stoop)	2019	8 to 12	2	6,700.00	6,700	6,700	25,826		6,971										8,497						
5.980	230	230	Square Feet	Windows and Doors	2029	to 40	12	46.00	10,580	10,580	13,418												13,418						
Property Site Elements																													
6.020	97,260	97,260	Square Yards	Asphalt Pavement, Crack Repair, Patch, Partial Seal Coat and Striping (2017 is Budgeted)	2017	to 2	0	1.70	165,342	165,342	3,613,249	158,500		172,022	178,971	186,202	193,725	201,551				209,694			218,165				
6.040	10,800	10,800	Square Yards	Asphalt Pavement, Mill and Overlay, Phase I	2029	15 to 20	12	20.00	216,000	216,000	273,940												273,940						
6.041	8,060	8,060	Square Yards	Asphalt Pavement, Mill and Overlay, Phase II	2029	15 to 20	12	20.00	161,200	161,200	204,441												204,441						
6.042	7,170	7,170	Square Yards	Asphalt Pavement, Mill and Overlay, Phase III	2030	15 to 20	13	20.00	143,400	143,400	185,503														185,503				
6.043	5,890	5,890	Square Yards	Asphalt Pavement, Mill and Overlay, Phase IV	2031	15 to 20	14	20.00	117,800	117,800	155,435															155,435			
6.044	16,540	16,540	Square Yards	Asphalt Pavement, Mill and Overlay, Phase V	2035	15 to 20	18	20.00	330,800	330,800	472,464																		
6.045	4,170	4,170	Square Yards	Asphalt Pavement, Mill and Overlay, Phase VI	2038	15 to 20	21	20.00	83,400	83,400	126,407																		
6.046	12,520	12,520	Square Yards	Asphalt Pavement, Mill and Overlay, Phase VII	2039	15 to 20	22	20.00	250,400	250,400	387,113																		
6.047	20,660	10,330	Square Yards	Asphalt Pavement, Mill and Overlay, Phase VIII, Phased	2045	15 to 20	28 to 29	20.00	206,600	413,200	726,586																		
6.048	11,450	11,450	Square Yards	Asphalt Pavement, Mill and Overlay, Phase IX	2047	15 to 20	30	20.00	229,000	229,000	414,802																		
6.055	4,170	4,170	Square Yards	Asphalt Pavement, Total Replacement, Phase VI (2017 is Budgeted)	2017	15 to 20	0	75.00	312,750	312,750	315,000	315,000																	
6.056	12,520	12,520	Square Yards	Asphalt Pavement, Total Replacement, Phase VII	2019	15 to 20	2	75.00	939,000	939,000	976,936		976,936																
6.057	20,660	10,330	Square Yards	Asphalt Pavement, Total Replacement, Phase VIII, Phased	2025	15 to 20	8 to 9	75.00	774,750	1,549,500	1,833,641							907,743	925,898										
6.058	11,450	11,450	Square Yards	Asphalt Pavement, Total Replacement, Phase IX	2028	15 to 20	11	75.00	858,750	858,750	1,067,748												1,067,748						
6.080	6,500	6,500	Square Yards	Asphalt Pavement, Total Replacement, Nature Trail	2025	10 to 15	8	25.00	162,500	162,500	446,641								190,395										
6.091	1	1	Allowance	Bridge, Covered, Nature Trail	2035	to 25	18	34,000.00	34,000	34,000	48,560																		
6.092	1	1	Allowance	Bridge, Honeymoon	2036	to 25	19	160,000.00	160,000	160,000	233,090																		
6.099	500	500	Linear Feet	Bulkhead, Honeymoon Bridge	2030	15 to 25	13	180.00	90,000	90,000	116,425														116,425				
6.100	81	20	Each	Catch Basins, Inspections and Capital Repairs, Phased	2017	15 to 20	0 to 12	950.00	19,238	76,950	206,429	19,238			20,823				22,540				24,398						
6.110	28,500	1,425	Linear Feet	Concrete Curbs and Gutters, Partial	2017	to 65	0 to 30+	32.50	46,313	926,250	496,956	46,312			50,130				54,262				58,735						
6.360	1	1	Each	Gazebo, Clinton S. Bradley Park	2032	to 35	15	55,000.00	55,000	55,000	74,023																74,023		
6.361	1	1	Each	Gazebo, Muskrat Park	2034	to 25	17	17,000.00	17,000	17,000	23,804																		
6.560	28	28	Each	Light Poles and Fixtures, St. Mary's Square and West Chestnut Street	2032	to 25	15	1,800.00	50,400	50,400	67,832																67,832		
6.561	5	5	Each	Light Poles and Fixtures, Water Street	2029	to 25	12	2,100.00	10,500	10,500	13,317												13,317						
6.620	4,800	4,800	Square Feet	Pavers, Masonry, Muskrat Park	2031	15 to 20	14	15.00	72,000	72,000	95,002															95,002			
6.650	1	1	Allowance	Pipes, Subsurface Utilities	2019	to 85+	2	50,000.00	50,000	50,000	558,202		52,020				56,308							60,950			65,974		
6.660	1	1	Allowance	Playground Equipment, Back Creek Park	2029	15 to 20	12	6,500.00	6,500	6,500	20,018												8,244						
6.661	1	1	Allowance	Playground Equipment, Clinton S. Bradley and Hollis Parks	2020	15 to 20	3	114,000.00	114,000	114,000	293,764				120,978														
6.701	1	1	Allowance	Public Rest Rooms, Carpenter Street, Renovation	2033	to 20	16	13,000.00	13,000	13,000	17,846																		
6.702	1	1	Allowance	Public Rest Rooms, Mill Street, Renovation	2033	to 20	16	9,000.00	9,000	9,000	12,355																		
6.703	1	1	Allowance	Public Rest Rooms, Fiber Cement Siding, Windows and Doors, Mill and Carpenter Streets	2047	to 35	30	21,000.00	21,000	21,000	38,039																		
6.704	1	1	Allowance	Shed, West Harbor Road, Replacement	2025	to 35	8	30,000.00	30,000	30,000	35,150								35,150										
6.820	4	1	Allowance	Site Furniture, Phased	2020	15 to 25	3 to 18	19,300.00	19,300	77,200	159,662				20,481					22,613					24,967				
Vehicular and Maintenance Equipment																													

General Fund
RESERVE EXPENDITURES

Town of St. Michaels
St. Michaels, Maryland

Line Item	Total Quantity	Per Phase Quantity	Units	Reserve Component Inventory	Estimated 1st Year of Event	Life Analysis, Years		Costs, \$				16 2033	17 2034	18 2035	19 2036	20 2037	21 2038	22 2039	23 2040	24 2041	25 2042	26 2043	27 2044	28 2045	29 2046	30 2047	
						Useful	Remaining	Unit (2017)	Per Phase (2017)	Total (2017)	30-Year Total (Inflated)																
Rental Property Building (Exterior Elements Only)																											
5.280	26	26	Squares	Roof Assembly, Asphalt Shingles	2019	15 to 20	2	440.00	11,440	11,440	28,901					16,999											
5.820	1	1	Allowance	Walls, Masonry and Wood Siding, Inspections, Repairs and Partial Paint Finishes (Incl. Masonry Stoop)	2019	8 to 12	2	6,700.00	6,700	6,700	25,826						10,358										
5.980	230	230	Square Feet	Windows and Doors	2029	to 40	12	46.00	10,580	10,580	13,418																
Property Site Elements																											
6.020	97,260	97,260	Square Yards	Asphalt Pavement, Crack Repair, Patch, Partial Seal Coat and Striping (2017 is Budgeted)	2017	to 2	0	1.70	165,342	165,342	3,613,249	226,979		236,149	245,690	255,615	265,942	276,686	287,864								299,494
6.040	10,800	10,800	Square Yards	Asphalt Pavement, Mill and Overlay, Phase I	2029	15 to 20	12	20.00	216,000	216,000	273,940																
6.041	8,060	8,060	Square Yards	Asphalt Pavement, Mill and Overlay, Phase II	2029	15 to 20	12	20.00	161,200	161,200	204,441																
6.042	7,170	7,170	Square Yards	Asphalt Pavement, Mill and Overlay, Phase III	2030	15 to 20	13	20.00	143,400	143,400	185,503																
6.043	5,890	5,890	Square Yards	Asphalt Pavement, Mill and Overlay, Phase IV	2031	15 to 20	14	20.00	117,800	117,800	155,435																
6.044	16,540	16,540	Square Yards	Asphalt Pavement, Mill and Overlay, Phase V	2035	15 to 20	18	20.00	330,800	330,800	472,464		472,464														
6.045	4,170	4,170	Square Yards	Asphalt Pavement, Mill and Overlay, Phase VI	2038	15 to 20	21	20.00	83,400	83,400	126,407					126,407											
6.046	12,520	12,520	Square Yards	Asphalt Pavement, Mill and Overlay, Phase VII	2039	15 to 20	22	20.00	250,400	250,400	387,113						387,113										
6.047	20,660	10,330	Square Yards	Asphalt Pavement, Mill and Overlay, Phase VIII, Phased	2045	15 to 20	28 to 29	20.00	206,600	413,200	726,586										359,696	366,890					
6.048	11,450	11,450	Square Yards	Asphalt Pavement, Mill and Overlay, Phase IX	2047	15 to 20	30	20.00	229,000	229,000	414,802																414,802
6.055	4,170	4,170	Square Yards	Asphalt Pavement, Total Replacement, Phase VI (2017 is Budgeted)	2017	15 to 20	0	75.00	312,750	312,750	315,000																
6.056	12,520	12,520	Square Yards	Asphalt Pavement, Total Replacement, Phase VII	2019	15 to 20	2	75.00	939,000	939,000	976,936																
6.057	20,660	10,330	Square Yards	Asphalt Pavement, Total Replacement, Phase VIII, Phased	2025	15 to 20	8 to 9	75.00	774,750	1,549,500	1,833,641																
6.058	11,450	11,450	Square Yards	Asphalt Pavement, Total Replacement, Phase IX	2028	15 to 20	11	75.00	858,750	858,750	1,067,748																
6.080	6,500	6,500	Square Yards	Asphalt Pavement, Total Replacement, Nature Trail	2025	10 to 15	8	25.00	162,500	162,500	446,641						256,246										
6.091	1	1	Allowance	Bridge, Covered, Nature Trail	2035	to 25	18	34,000.00	34,000	34,000	48,560		48,560														
6.092	1	1	Allowance	Bridge, Honeymoon	2036	to 25	19	160,000.00	160,000	160,000	233,090				233,090												
6.099	500	500	Linear Feet	Bulkhead, Honeymoon Bridge	2030	15 to 25	13	180.00	90,000	90,000	116,425																
6.100	81	20	Each	Catch Basins, Inspections and Capital Repairs, Phased	2017	15 to 20	0 to 12	950.00	19,238	76,950	206,429	26,409			28,586			30,942			33,493						
6.110	28,500	1,425	Linear Feet	Concrete Curbs and Gutters, Partial	2017	to 65	0 to 30+	32.50	46,313	926,250	496,956	63,577			68,818			74,491			80,631						
6.360	1	1	Each	Gazebo, Clinton S. Bradley Park	2032	to 35	15	55,000.00	55,000	55,000	74,023																
6.361	1	1	Each	Gazebo, Muskrat Park	2034	to 25	17	17,000.00	17,000	17,000	23,804		23,804														
6.560	28	28	Each	Light Poles and Fixtures, St. Mary's Square and West Chestnut Street	2032	to 25	15	1,800.00	50,400	50,400	67,832																
6.561	5	5	Each	Light Poles and Fixtures, Water Street	2029	to 25	12	2,100.00	10,500	10,500	13,317																
6.620	4,800	4,800	Square Feet	Pavers, Masonry, Muskrat Park	2031	15 to 20	14	15.00	72,000	72,000	95,002																
6.650	1	1	Allowance	Pipes, Subsurface Utilities	2019	to 85+	2	50,000.00	50,000	50,000	558,202		71,412			77,299					83,671						90,568
6.660	1	1	Allowance	Playground Equipment, Back Creek Park	2029	15 to 20	12	6,500.00	6,500	6,500	20,018																11,774
6.661	1	1	Allowance	Playground Equipment, Clinton S. Bradley and Hollis Parks	2020	15 to 20	3	114,000.00	114,000	114,000	293,764					172,786											
6.701	1	1	Allowance	Public Rest Rooms, Carpenter Street, Renovation	2033	to 20	16	13,000.00	13,000	13,000	17,846	17,846															
6.702	1	1	Allowance	Public Rest Rooms, Mill Street, Renovation	2033	to 20	16	9,000.00	9,000	9,000	12,355	12,355															
6.703	1	1	Allowance	Public Rest Rooms, Fiber Cement Siding, Windows and Doors, Mill and Carpenter Streets	2047	to 35	30	21,000.00	21,000	21,000	38,039																38,039
6.704	1	1	Allowance	Shed, West Harbor Road, Replacement	2025	to 35	8	30,000.00	30,000	30,000	35,150																
6.820	4	1	Allowance	Site Furniture, Phased	2020	15 to 25	3 to 18	19,300.00	19,300	77,200	159,662		27,565			30,434					33,602						
Vehicular and Maintenance Equipment																											

General Fund
RESERVE EXPENDITURES

Town of St. Michaels
St. Michaels, Maryland

Line Item	Total Quantity	Per Phase Quantity	Units	Reserve Component Inventory	Estimated 1st Year of Event	Life Analysis, Years		Costs, \$				16 2033	17 2034	18 2035	19 2036	20 2037	21 2038	22 2039	23 2040	24 2041	25 2042	26 2043	27 2044	28 2045	29 2046	30 2047	
						Useful	Remaining	Unit (2017)	Per Phase (2017)	Total (2017)	30-Year Total (Inflated)																
7.100	1	1	Each	Administration Vehicle, Truck, Ford 150XL, 2014	2028	10 to 15	11	25,000.00	25,000	25,000	71,295								40,211								
7.150	1	1	Each	Backhoe, Case 580M, 2002	2023	to 20	6	68,500.00	68,500	68,500	191,771																
7.200	1	1	Each	Chipper, Vermeer 935, 2001	2021	15 to 20	4	18,500.00	18,500	18,500	49,198							29,173									
7.250	1	1	Each	Gator, John Deere, 2011	2032	to 20	15	6,000.00	6,000	6,000	8,075																
7.300	3	1	Each	Mowers, John Deere, 1995 and 2012, Phased	2019	10 to 15	2 to 10	15,000.00	15,000	45,000	167,460			21,424			23,190							25,101			27,170
7.350	1	1	Each	Police Vehicle, Sedan, Ford Interceptor, 2014	2025	to 10	8	31,000.00	31,000	31,000	134,569			44,276													53,972
7.400	1	1	Each	Police Vehicle, SUV, Ford Explorer, 2008	2019	to 10	2	30,000.00	30,000	30,000	115,638							46,379									
7.450	1	1	Each	Police Vehicle, SUV, Ford Explorer, 2013	2024	to 10	7	30,000.00	30,000	30,000	127,675		42,007														51,207
7.500	1	1	Each	Police Vehicle, SUV, Ford Explorer, 2015	2026	to 10	9	30,000.00	30,000	30,000	132,832				43,704												53,275
7.550	1	1	Each	Police Vehicle, SUV, Ford Explorer, 2016	2027	to 10	10	30,000.00	30,000	30,000	135,489					44,578											54,341
7.600	1	1	Each	Public Works Vehicle, Dump Truck, International, 2006	2027	to 20	10	71,000.00	71,000	71,000	215,156																128,607
7.650	1	1	Each	Public Works Vehicle, Garbage Truck, Freightliner, 2014	2033	to 20	16	152,000.00	152,000	152,000	208,663	208,663															
7.700	1	1	Each	Public Works Vehicle, Truck, Ford-150, 2000	2019	10 to 15	2	20,500.00	20,500	20,500	50,033		28,705														
7.750	1	1	Each	Public Works Vehicle, Truck, Ford F-550, 2003	2019	10 to 15	2	30,500.00	30,500	30,500	74,439		42,707														
7.800	2	2	Each	Public Works Vehicles, Trucks, Ford F-150 Super Cab, 2010 and 2014	2026	10 to 15	9	25,000.00	50,000	50,000	140,177								80,422								
7.850	1	1	Each	Roller, 2008	2036	25 to 30	19	16,500.00	16,500	16,500	24,037				24,037												
7.900	1	1	Each	Street Sweeper, 2000	2020	15 to 20	3	34,500.00	34,500	34,500	89,948							53,336									
7.950	1	1	Each	Tractor, John Deere, 2006	2027	to 20	10	16,500.00	16,500	16,500	50,000																29,887
		1	Allowance	2017 Reserve Expenditures	2017	N/A	0	263,000	263,000	263,000	263,000																
		1	Allowance	Reserve Study Update with Site Visit	2019	2	2	11,800.00	11,800	11,800	11,800																
Anticipated Expenditures, By Year											\$17,505,176	607,309	152,626	958,985	325,597	434,390	375,734	1,020,257	425,447	492,008	0	500,087	95,586	894,525	434,372	1,233,215	

Water Fund Expenditures
RESERVE EXPENDITURES

Town of St. Michaels
St. Michaels, Maryland

Explanatory Notes:

- 1) **2.0%** is the estimated future Inflation Rate for estimating Future Replacement Costs.
- 2) **FY2017** is Fiscal Year beginning July 1, 2016 and ending June 30, 2017.

Line Item	Total Quantity	Per Phase Quantity	Units	Reserve Component Inventory	Estimated 1st Year of Event	Life Analysis, Years		Costs, \$				RUL = 0 FY2017	1 2018	2 2019	3 2020	4 2021	5 2022	6 2023	7 2024	8 2025	9 2026	10 2027	11 2028	12 2029	13 2030	14 2031	15 2032
						Useful	Remaining	Unit (2017)	Per Phase (2017)	Total (2017)	30-Year Total (Inflated)																
8.112	2	2 Each		Control Panels, Arsenic Treatment Systems	2031	to 15	14	9,000.00	18,000	18,000	55,716																23,751
8.212	2	2 Each		Doors, Garage, Arsenic Treatment Buildings	2034	15 to 20	17	4,500.00	9,000	9,000	12,602																
8.302	2	2 Each		Energy Management Systems, Variable Frequency Drives, Arsenic Treatment Systems	2036	15 to 20	19	7,000.00	14,000	14,000	20,395																
8.311	1	1 Allowance		Filter Media Systems, Arsenic Treatment Plant #2, Marengo Street	2026	to 10	9	110,000.00	110,000	110,000	487,052										131,460						
8.312	1	1 Allowance		Filter Media Systems, Arsenic Treatment Plant #3, Gloria Avenue	2019	to 3	2	60,000.00	60,000	60,000	827,481		62,424			66,245			70,300			74,602				79,169	
8.413	1	1 Each		Generator, 60-kW, Arsenic Treatment Building #2, Marengo Street (Incl. Transfer Switch)	2034	25 to 35	17	60,000.00	60,000	60,000	84,014																
8.414	1	1 Each		Generator, 150-kW, Arsenic Treatment Building #3, Gloria Avenue (Incl. Transfer Switch)	2035	25 to 35	18	137,000.00	137,000	137,000	195,670																
8.462	1	1 Allowance		Paint Finishes, Vessels, Backflow Tanks, and Pipes	2023	6 to 8	6	10,000.00	10,000	10,000	56,126							11,262							12,936		
8.502	1	1 Each		Pump, 25-HP, Well #2, Marengo Street	2032	to 25	15	18,000.00	18,000	18,000	24,226																24,226
8.503	1	1 Each		Pump, 40-HP, Well #3, Gloria Avenue	2019	to 25	2	25,000.00	25,000	25,000	68,682		26,010														
8.602	17	17 Squares		Roof Assemblies, Metal	2044	25 to 30	27	700.00	11,900	11,900	20,312																
8.702	21	3 Each		Valves, Partial	2031	15 to 20	14 to 30+	4,500.00	13,500	94,500	83,168																17,813
8.752	1	1 Allowance		Vessels, Arsenic Treatment System	2036	to 50	19	216,000.00	216,000	216,000	314,671																
8.812	1	1 Allowance		Water Tower, Inspection and Rehabilitation, North Talbot Street	2017	to 10	0	86,000.00	86,000	86,000	318,625	86,000									104,834						
8.813	1	1 Allowance		Water Tower, Inspection and Rehabilitation, Woodside Avenue	2020	to 10	3	86,000.00	86,000	86,000	202,514				91,264											111,250	
8.902	1	1 Allowance		Water Tower, Woodside Avenue, Replacement	2040	to 65	23	610,000.00	610,000	610,000	961,909																
Anticipated Expenditures, By Year											\$3,733,163	86,000	0	88,434	91,264	0	66,245	11,262	0	70,300	131,460	104,834	74,602	0	124,186	120,733	24,226

Water Fund Expenditures
RESERVE EXPENDITURES

Town of St. Michaels
St. Michaels, Maryland

Line Item	Total Quantity	Per Phase Quantity	Units	Reserve Component Inventory	Estimated 1st Year of Event	Life Analysis, Years		Costs, \$				16 2033	17 2034	18 2035	19 2036	20 2037	21 2038	22 2039	23 2040	24 2041	25 2042	26 2043	27 2044	28 2045	29 2046	30 2047
						Useful	Remaining	Unit (2017)	Per Phase (2017)	Total (2017)	30-Year Total (Inflated)															
8.112	2	2 Each		Control Panels, Arsenic Treatment Systems	2031	to 15	14	9,000.00	18,000	18,000	55,716															31,965
8.212	2	2 Each		Doors, Garage, Arsenic Treatment Buildings	2034	15 to 20	17	4,500.00	9,000	9,000	12,602	12,602														
8.302	2	2 Each		Energy Management Systems, Variable Frequency Drives, Arsenic Treatment Systems	2036	15 to 20	19	7,000.00	14,000	14,000	20,395				20,395											
8.311	1	1 Allowance		Filter Media Systems, Arsenic Treatment Plant #2, Marengo Street	2026	to 10	9	110,000.00	110,000	110,000	487,052				160,249											195,343
8.312	1	1 Allowance		Filter Media Systems, Arsenic Treatment Plant #3, Gloria Avenue	2019	to 3	2	60,000.00	60,000	60,000	827,481	84,014			89,157		94,614				100,405					106,551
8.413	1	1 Each		Generator, 60-kW, Arsenic Treatment Building #2, Marengo Street (Incl. Transfer Switch)	2034	25 to 35	17	60,000.00	60,000	60,000	84,014	84,014														
8.414	1	1 Each		Generator, 150-kW, Arsenic Treatment Building #3, Gloria Avenue (Incl. Transfer Switch)	2035	25 to 35	18	137,000.00	137,000	137,000	195,670			195,670												
8.462	1	1 Allowance		Paint Finishes, Vessels, Backflow Tanks, and Pipes	2023	6 to 8	6	10,000.00	10,000	10,000	56,126				14,859										17,069	
8.502	1	1 Each		Pump, 25-HP, Well #2, Marengo Street	2032	to 25	15	18,000.00	18,000	18,000	24,226															
8.503	1	1 Each		Pump, 40-HP, Well #3, Gloria Avenue	2019	to 25	2	25,000.00	25,000	25,000	68,682														42,672	
8.602	17	17 Squares		Roof Assemblies, Metal	2044	25 to 30	27	700.00	11,900	11,900	20,312														20,312	
8.702	21	3 Each		Valves, Partial	2031	15 to 20	14 to 30+	4,500.00	13,500	94,500	83,168				19,667		21,714									23,974
8.752	1	1 Allowance		Vessels, Arsenic Treatment System	2036	to 50	19	216,000.00	216,000	216,000	314,671				314,671											
8.812	1	1 Allowance		Water Tower, Inspection and Rehabilitation, North Talbot Street	2017	to 10	0	86,000.00	86,000	86,000	318,625				127,791											
8.813	1	1 Allowance		Water Tower, Inspection and Rehabilitation, Woodside Avenue	2020	to 10	3	86,000.00	86,000	86,000	202,514															
8.902	1	1 Allowance		Water Tower, Woodside Avenue, Replacement	2040	to 65	23	610,000.00	610,000	610,000	961,909						961,909									
Anticipated Expenditures, By Year											\$3,733,163	0	180,630	195,670	514,982	231,807	0	0	1,056,523	21,714	0	100,405	80,053	0	357,833	0

RESERVE FUNDING PLAN

General Fund

CASH FLOW ANALYSIS

Town of St. Michaels St. Michaels, Maryland	Individual Reserve Budgets & Cash Flows for the Next 30 Years															
	FY2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Reserves at Beginning of Year (Note 1)	8,574,049	7,853,979	8,114,400	7,087,216	7,131,282	7,226,164	7,593,834	7,609,184	7,951,192	6,839,019	6,195,759	6,100,969	5,369,965	4,875,713	4,769,187	4,596,464
Total Recommended Reserve Contributions (Note 2)	0	263,000	268,300	273,700	279,200	284,800	290,500	296,300	302,200	308,200	314,400	320,700	327,100	333,600	340,300	347,100
Plus Estimated Interest Earned, During Year (Note 3)	97,980	95,239	90,666	84,802	85,631	88,390	90,674	92,805	88,212	77,742	73,340	68,415	61,107	57,524	55,859	56,240
Less Anticipated Expenditures, By Year	(818,050)	(97,818)	(1,386,150)	(314,436)	(269,949)	(5,520)	(365,824)	(47,097)	(1,502,585)	(1,029,202)	(482,530)	(1,120,119)	(882,459)	(497,650)	(568,882)	(166,767)
Anticipated Reserves at Year End	<u>\$7,853,979</u>	<u>\$8,114,400</u>	<u>\$7,087,216</u>	<u>\$7,131,282</u>	<u>\$7,226,164</u>	<u>\$7,593,834</u>	<u>\$7,609,184</u>	<u>\$7,951,192</u>	<u>\$6,839,019</u>	<u>\$6,195,759</u>	<u>\$6,100,969</u>	<u>\$5,369,965</u>	<u>\$4,875,713</u>	<u>\$4,769,187</u>	<u>\$4,596,464</u>	<u>\$4,833,037</u>

(continued)

	Individual Reserve Budgets & Cash Flows for the Next 30 Years, Continued															
	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	
Reserves at Beginning of Year	4,833,037	4,636,205	4,901,564	4,366,154	4,468,951	4,471,081	4,539,991	3,969,185	3,997,956	3,968,260	4,441,518	4,425,918	4,825,711	4,435,421	4,512,416	
Total Recommended Reserve Contributions	354,000	361,100	368,300	375,700	383,200	390,900	398,700	406,700	414,800	423,100	431,600	440,200	449,000	458,000	467,200	
Plus Estimated Interest Earned, During Year	56,477	56,885	55,275	52,694	53,320	53,744	50,751	47,518	47,512	50,158	52,887	55,179	55,235	53,367	49,553	
Less Anticipated Expenditures, By Year	(607,309)	(152,626)	(958,985)	(325,597)	(434,390)	(375,734)	(1,020,257)	(425,447)	(492,008)	0	(500,087)	(95,586)	(894,525)	(434,372)	(1,233,215)	
Anticipated Reserves at Year End	<u>\$4,636,205</u>	<u>\$4,901,564</u>	<u>\$4,366,154</u>	<u>\$4,468,951</u>	<u>\$4,471,081</u>	<u>\$4,539,991</u>	<u>\$3,969,185</u>	<u>\$3,997,956</u>	<u>\$3,968,260</u>	<u>\$4,441,518</u>	<u>\$4,425,918</u>	<u>\$4,825,711</u>	<u>\$4,435,421</u>	<u>\$4,512,416</u>	<u>\$3,795,954</u>	

(NOTE 4)

Explanatory Notes:

- 1) Year 2017 starting reserves are as of June 30, 2016; FY2017 starts July 1, 2016 and ends June 30, 2017.
- 2) Reserve Contributions for 2017 were not budgeted; 2018 is the first year of recommended contributions.
- 3) 1.20% is the estimated annual rate of return on invested reserves.
- 4) Accumulated year 2047 ending reserves consider the need to fund for subsequent total replacement of the asphalt pavement streets and nature trail shortly after 2047, and the age, size, overall condition and complexity of the property.

RESERVE FUNDING PLAN

Water Fund

CASH FLOW ANALYSIS

Town of St. Michaels St. Michaels, Maryland	Individual Reserve Budgets & Cash Flows for the Next 30 Years															
	FY2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032
Reserves at Beginning of Year (Note 1)	329,076	246,509	362,139	392,405	422,501	547,084	608,934	729,253	864,861	933,889	944,834	985,312	1,059,405	1,212,153	1,244,620	1,283,767
Total Recommended Reserve Contributions (Note 2)	0	112,000	114,200	116,500	118,800	121,200	123,600	126,100	128,600	131,200	133,800	136,500	139,200	142,000	144,800	147,700
Plus Estimated Interest Earned, During Year (Note 3)	3,433	3,630	4,500	4,860	5,783	6,895	7,981	9,508	10,728	11,205	11,512	12,195	13,548	14,653	15,080	16,146
Less Anticipated Expenditures, By Year	(86,000)	0	(88,434)	(91,264)	0	(66,245)	(11,262)	0	(70,300)	(131,460)	(104,834)	(74,602)	0	(124,186)	(120,733)	(24,226)
Anticipated Reserves at Year End	<u>\$246,509</u>	<u>\$362,139</u>	<u>\$392,405</u>	<u>\$422,501</u>	<u>\$547,084</u>	<u>\$608,934</u>	<u>\$729,253</u>	<u>\$864,861</u>	<u>\$933,889</u>	<u>\$944,834</u>	<u>\$985,312</u>	<u>\$1,059,405</u>	<u>\$1,212,153</u>	<u>\$1,244,620</u>	<u>\$1,283,767</u>	<u>\$1,423,387</u>

(continued)

	Individual Reserve Budgets & Cash Flows for the Next 30 Years, Continued														
	2033	2034	2035	2036	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047
Reserves at Beginning of Year	1,423,387	1,592,072	1,584,085	1,563,991	1,225,546	1,171,133	1,352,585	1,539,534	669,285	833,132	1,024,310	1,120,396	1,241,832	1,448,981	1,302,458
Total Recommended Reserve Contributions	150,700	153,700	156,800	159,900	163,100	166,400	169,700	173,100	176,600	180,100	183,700	187,400	191,100	194,900	198,800
Plus Estimated Interest Earned, During Year	17,985	18,943	18,776	16,637	14,294	15,052	17,249	13,174	8,961	11,078	12,791	14,089	16,049	16,410	16,822
Less Anticipated Expenditures, By Year	0	(180,630)	(195,670)	(514,982)	(231,807)	0	0	(1,056,523)	(21,714)	0	(100,405)	(80,053)	0	(357,833)	0
Anticipated Reserves at Year End	<u>\$1,592,072</u>	<u>\$1,584,085</u>	<u>\$1,563,991</u>	<u>\$1,225,546</u>	<u>\$1,171,133</u>	<u>\$1,352,585</u>	<u>\$1,539,534</u>	<u>\$669,285</u>	<u>\$833,132</u>	<u>\$1,024,310</u>	<u>\$1,120,396</u>	<u>\$1,241,832</u>	<u>\$1,448,981</u>	<u>\$1,302,458</u>	<u>\$1,518,080</u>

(NOTE 4)

Explanatory Notes:

- 1) Year 2017 starting reserves are as of June 30, 2016; FY2017 starts July 1, 2016 and ends June 30, 2017.
- 2) Reserve Contributions for 2017 were not budgeted; 2018 is the first year of recommended contributions.
- 3) 1.20% is the estimated annual rate of return on invested reserves.
- 4) Accumulated year 2047 ending reserves consider the need to fund for replacement of the North Talbot Street water tower shortly after 2047, and the age, size, overall condition and complexity of the property.

4. CONDITION ASSESSMENT

The Condition Assessment of this *Full Reserve Study* includes *Enhanced Solutions and Procedures* for select significant components. These narratives describe the Reserve Components, document specific problems and conditions, and may include detailed solutions and procedures for necessary capital repairs and replacements for the benefit of current and future board members. We advise the Board use this information to help define the scope and procedures for repair or replacement when soliciting bids or proposals from contractors. *However, the Report in whole or part is not and should not be used as a design specification or design engineering service.*

Administrative Building Elements



Administrative office building



Administrative office building meeting room



Masonry cracks and damage



Masonry cracks and mortar deterioration

The Administrative Building was constructed in 1955 and comprises an asphalt shingle roof, masonry walls, wood siding, and interior furnishings and fixtures. The Town replaced the majority of the building carpet in 2000, the meeting room carpet in 2006, and the roof in 2010. Additionally, the Town budgeted for mold remediation structural repairs at the building crawlspace in 2017. The anticipated future expenditures of the Administrative Building comprise \$373,460, or approximately two percent (2.1%) of the total *General Fund* future expenditures.

The most significant expenditure for the Administrative buildings is the *furnishings and fixtures*. We recommend phased replacement of up to twenty-five percent (25%) of the furnishings and fixtures every five years beginning by 2020. Our cost includes replacement of the automated shelving system and limited appliances.

Other significant expenditures include the *interior renovations* of the Administrative Building. Interior components include:

- Carpet, tile, and vinyl floor coverings
- Wood floor and wall coverings
- Paint finishes on the walls and ceilings
- Rest room plumbing fixtures

The useful lives of these interior building elements vary. However, due to the interrelated nature of these elements and the desire to achieve a uniform appearance, we recommend the Town combine their replacements into coordinated interior renovations. We recommend the Town anticipate a complete interior renovation of the Administrative Building every 20 years. The complete renovation should include up to fifty percent (50%) of the rest room plumbing fixtures and total replacement of the remaining components listed above by 2030.

In addition to the complete renovation, the Town should also anticipate partial interior renovations every 10 years. These partial renovations should include the following:

- Application of paint finish to all surfaces
- Replacement of the carpet
- Replacement of up to fifty percent (50%) of the rest room plumbing fixtures

The Town should anticipate partial renovations by 2020 and again by 2040.

The times and costs of these repairs and replacements vary. However, we judge the amount shown on Line Items 1.105 through 1.980 of the *General Fund Reserve Expenditures* sufficient to budget appropriate reserves.

Boy Scout Cabin Elements



Boy Scout cabin exterior overview



Boy Scout cabin interior overview

The Boy Scout Cabin was constructed in 1920 and comprises an asphalt shingle roof, wood siding, stone chimney, and interior furnishings and fixtures. The Town replaced the asphalt shingle roof in 2013 and a portion of the wood siding in 2016. The anticipated future expenditures of the Boy Scout Cabin comprise \$106,480, or less than one percent (0.6%) of the total *General Fund* future expenditures.

The most significant expenditure includes the *interior renovations* of the Boy Scout Cabin. Interior components include:

- Wood and vinyl floor coverings
- Acoustical ceiling tiles
- Paint finishes on the walls
- Rest room plumbing fixtures

The useful lives of these interior building elements vary. However, due to the interrelated nature of these elements and the desire to achieve a uniform appearance, we recommend the Town combine their replacements into coordinated interior renovations. We recommend the Town anticipate a complete interior renovation of the Boy Scout Cabin every 20 years, or by 2019 and again by 2039. The complete renovation should include total replacement

of the components listed above. We recommend interim paint finishes and furnishing replacements be funded as needed through the operating budget.

Other significant expenditures include remaining replacement of the *wood siding*. The wood siding has a useful life of up to 35 years. Based on the age, condition and partial siding replacements in 2016, we recommend replacement of the remaining wood siding in 2018.

The times and costs of these repairs and replacements vary. However, we judge the amount shown on Line Items 2.201 through 2.980 of the *General Fund Reserve Expenditures* sufficient to budget appropriate reserves.

Police Station Elements



Police station front elevation



Police station rear elevation



Front wood deck and steps



Upper level meeting area

The Police Station was renovated in 2006 including construction of additional building space. The building comprises an asphalt shingle roof, vinyl siding, police equipment including a finger scan system, radio and phone systems, and interior furnishings and fixtures. The Town purchased radios in 2000 and a finger scan system in 2014. The Town also trained a K-9 police dog in 2016. The anticipated future expenditures of the Police Station comprise \$634,425, or approximately four percent (3.6%) of the total *General Fund* future expenditures.

Additionally, the Town has proposed building a new Police Station. However, for the purposes of the Reserve Study, we include like kind replacement of the existing Police Station building components. Updates to the reserve study will reevaluate the current building and adjust our timing and costs as necessary.

The most significant expenditure includes the *radios*. The radios have a useful life of 15- to 20-years and we recommend replacement by 2020 and again by 2039. Other significant expenditures include the *furnishings and fixtures*. We recommend phased replacement of up to twenty-five percent (25%) of these items every five years beginning by 2020.

The times and costs of these repairs and replacements vary. However, we judge the amount shown on Line Items 3.120 through 3.980 of the *General Fund Reserve Expenditures* sufficient to budget appropriate reserves.

Town Shop Public Works Building and Garage Elements



Building overview



Interior office space



Fuel storage tank and pump

The Town Shop Public Works Building and Garage was constructed in 1955. The building comprises a flat roof, metal garage doors, a gas pump and fuel storage tanks on site. The fuel storage tanks were replaced in 1995 and the gas pump was replaced in 2016. The anticipated future expenditures of the Town Shop Public Works Building and Garage comprise \$351,031, or two percent (2.0%) of the total *General Fund* future expenditures.

The most significant expenditure includes the *flat roof*. We were unable to access the roof at the time of inspection. However, all flat roofs including built-up, EPDM (ethylene propylene diene monomer) and modified bitumen have typical useful lives of 15- to 20--years. The time or need to replace roofs becomes apparent with multiple or recurring leaks. St. Michaels should determine whether the origin of the leaks is from the membrane or flashings. The Town may incur less cost by repairs to the flashings than replacement of an entire roof. Based on the age of the roof, we recommend replacement in 2018 and again by 2038.

Other significant expenditures include the *metal sectional garage doors*. The Town has replaced springs and other components as needed at the garage doors but the age of the doors is unknown. We recommend replacement by 2019 and every 14 years thereafter. Our cost includes replacement of the operators. The Town should continue to fund interim replacements of garage door components through the operating budget. An additional significant cost is the *generator*. The generator has a useful life of 25- to 35- years. We recommend replacement by 2027.

The times and costs of these repairs and replacements vary. However, we judge the amount shown on Line Items 4.121 through 4.980 of the *General Fund Reserve Expenditures* sufficient to budget appropriate reserves.

Rental Property Building Elements



Rental property building



Organic growth at asphalt shingles



Masonry wall step cracks

The rental property building was constructed in 1959. The current tenant at the time of inspection is *Long & Foster Real Estate*. The building comprises an asphalt shingle roof, masonry walls and wood siding. The Town is responsible for the exterior and building service elements, while the tenant is responsible for interior building elements. The anticipated future expenditures of the rental property building comprise \$68,145, or less than one percent (0.4%) of the total *General Fund* future expenditures.

The most significant expenditure includes the *asphalt shingle roof*. The asphalt shingle roof has a useful life of 15- to 20-years and was last replaced in 1991. Based on the age and condition of the roof, we recommend replacement by 2019 and again by 2037.

The times and costs of these repairs and replacements vary. However, we judge the amount shown on Line Items 5.280 through 5.980 of the *General Fund Reserve Expenditures* sufficient to budget appropriate reserves.

Property Site Elements

The anticipated future expenditures of the Property Site Elements comprise \$13,710,380, or approximately seventy-eight percent (78.3%) of the total *General Fund* future expenditures.



Asphalt pavement in good condition – *Note: West Maple Avenue*



Asphalt pavement in good condition – *East Chew Avenue*



Asphalt pavement in fair condition – Note: Marengo Street



Pavement cracks at Marengo Street



Asphalt pavement in poor condition – Note: Grace Street



Alligator cracks at Grace Street



Alligator cracks and pavement deterioration at Grace Street



Alligator cracks and pavement deterioration at Douglas Lane



Nature trail overview



Nature trail overview



Concrete curb and gutter overview



Concrete gutter deterioration



Concrete gutter deterioration



Brick gutter overview



Playground equipment at Clinton S. Bradley



Playground equipment at Clinton S. Bradley



Playground equipment at Hollis Park



Playground equipment at Back Creek Park



Covered pedestrian bridge at the nature trail



Covered pedestrian bridge at the nature trail



Honeymoon Bridge



Honeymoon Bridge



Bulkhead overview



Bulkhead leaning section

The most significant expenditures for the Property Site Elements include the *repair and repaving of the asphalt pavement streets and parking areas* comprising of 97,260 square yards of pavement. The following table depicts the phase, location, quantity (in square yards), age and condition for each street and parking areas:

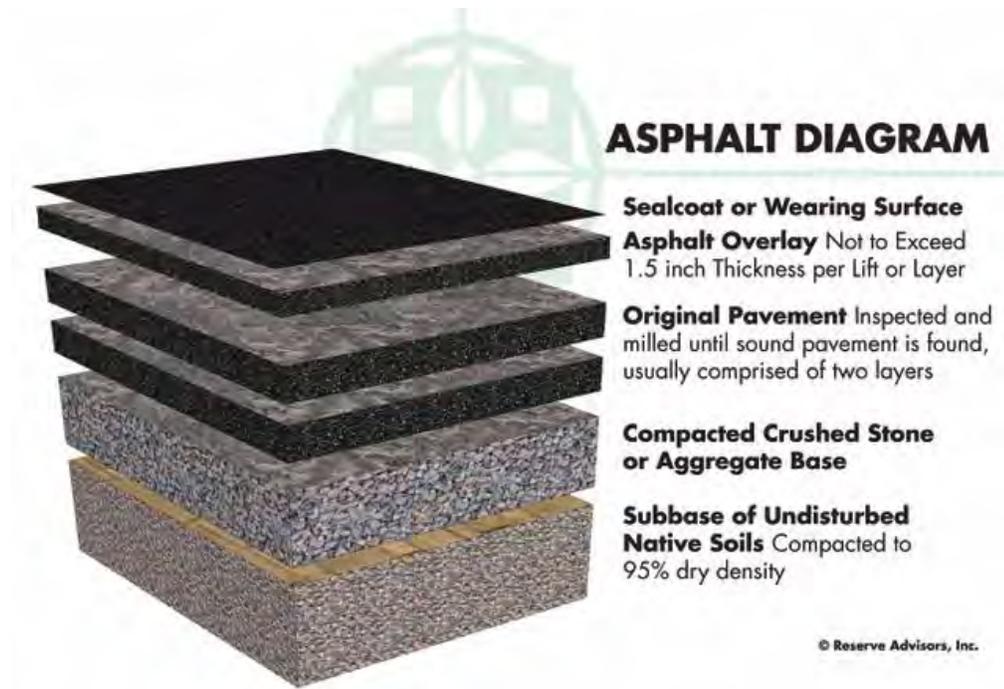
Phase	Location	Quantity (SY)	Age	Condition
I	Trusty Street	740	2008	Fair
I	Water Street	1,290	2008	Good to Fair
I	Gloria Avenue (Incl. Parking Lot)	2,140	2008	Good to Fair
I	Railroad Avenue	4,150	2008	Fair
I	Willow/Green Street	1,830	2008	Good to Fair
I	Church Street	650	2008	Fair
Total		10,800		
II	Lee Street	900	2008	Good to Fair
II	Mitchell Street	1,040	2008	Fair
II	Boundary Lane	1,200	2008	Fair
II	North Street	3,940	2008	Good to Fair
II	Canton Street	980	2008	Fair to Poor
Total		8,060		
III	St. Mary's Square	1,560	2009	Good to Fair
III	Tilden Street	550	2009	Good to Fair
III	West Harbor Road	1,690	2009	Fair
III	Carpenter Street	920	2009	Good to Fair
III	Mill Street	2,450	2009	Good to Fair
Total		7,170		
IV	Mulberry Street	2,430	2010	Good to Fair
IV	Cherry Street	1,250	2010	Good to Fair
IV	South Fremont Street	2,210	2010	Good
Total		5,890		
V	West Chew Street	2,750	2014/2015	Good
V	East Chew Street	5,370	2014/2015	Good
V	West Chestnut Street	3,170	2014/2015	Good
V	East Maple Street	3,250	2014/2015	Good
V	West Maple Street	2,000	2014/2015	Good
Total		16,540		
VI	Thompson Street	2,300	Unknown	Poor
VI	Grace Street	1,870	Unknown	Poor
Total		4,170		
VII	Parsonage Lane	1,430	Unknown	Fair to Poor
VII	North Radcliff Avenue	730	Unknown	Fair to Poor
VII	North Harbor Road	1,640	Unknown	Fair to Poor
VII	Meadow Street	2,890	Unknown	Fair to Poor
VII	Dodson Avenue	3,590	Unknown	Fair to Poor
VII	Conner Street	1,350	Unknown	Fair to Poor
VII	Douglas Lane	890	Unknown	Fair to Poor
Total		12,520		
VIII	Division Street	980	Unknown	Fair
VIII	West Marengo Street	1,200	Unknown	Fair
VIII	Calvert Avenue	3,280	Unknown	Fair
VIII	Seymour Avenue	3,300	Unknown	Fair
VIII	East Marengo Street	2,210	Unknown	Fair
VIII	South Radcliff Avenue	400	Unknown	Fair
VIII	Cedar Street	350	Unknown	Fair
VIII	Perry Street	6,430	Unknown	Fair
VIII	Webb Lane	360	Unknown	Fair
VIII	North Fremont Street	1,650	Unknown	Fair
VIII	Conner Street Alley	270	Unknown	Fair
VIII	Municipal Parking Lot	230	Unknown	Fair
Total		20,660		
IX	New Street	2,020	Unknown	Good to Fair
IX	East Chesnut Street	2,970	Unknown	Good to Fair
IX	Locust Street	1,000	Unknown	Good to Fair
IX	Chesapeake Avenue	1,610	Unknown	Good to Fair
IX	Muskrat Parking Lot	590	2013	Good
IX	Police Station Parking Lot	660	2012	Good
IX	Carpenter Street Parking Lot	1,210	2015	Good
IX	Mill Street Parking Lot	1,390	2012	Good
Total		11,450		

To maximize the life of the pavement, the Town should plan for repairs every three- to five-years. These activities reduce water infiltration and the effects of inclement weather. Asphalt pavement is susceptible to isolated areas of accelerated deterioration in areas that experience freeze-thaw cycles, at the centerlines of streets and at high traffic areas such as intersections. Depressions often appear at areas where vehicles park such as driveways and parking areas. Isolated areas of depressions, cracks and deterioration indicate the need for crack repairs and patching. The contractor should patch areas that exhibit potholes, alligator or spider web pattern cracks, and areas of pavement that are severely deteriorated from oil and gasoline deposits from parking vehicles. Area patching requires total replacement of isolated areas of pavement. The contractor should mechanically rout and fill all cracks with hot emulsion. Crack repair minimizes the chance of the cracks transmitting through the pavement.

Management informs us of budgeted repair activity in 2017. We recommend St. Michaels budget for subsequent crack repairs and patching at all the pavement, and partial seal coat applications and striping of the parking areas by 2019 and every two years thereafter.

The useful life of pavement in St. Michaels is from 15- to 20-years. We include the following repaving solutions and procedures for the benefit of the present and future board members. Components of asphalt pavement include native soil, aggregate and asphalt. First the contractor creates a base course of aggregate or crushed stone and native soil. The base course is individually compacted to ninety-five percent (95%) dry density prior to the application of the asphalt. Compaction assures a stable base for the asphalt that reduces the possibility of settlement. For street and parking lot systems, the initial installation of asphalt uses at least two lifts, or two separate applications of asphalt, over the base course. The first lift is the binder

course. The second lift is the wearing course. The wearing course comprises a finer aggregate for a smoother more watertight finish. The following diagram depicts these components:



The manner of repaving is either a mill and overlay or total replacement. A mill and overlay is a method of repaving where cracked, worn and failed pavement is mechanically removed or milled until sound pavement is found. A new layer of asphalt is overlaid atop the remaining base course of pavement. Total replacement includes the removal of all existing asphalt down to the base course of aggregate and native soil followed by the application of two or more new lifts of asphalt. We recommend mill and overlayment on asphalt pavement that exhibits normal deterioration and wear. We recommend total replacement of asphalt pavement that exhibits severe deterioration, inadequate drainage, pavement that has been overlaid multiple times in the past or where the configuration makes overlayment not possible.

A variety of repairs are necessary to deteriorated pavement prior to the application of an overlay. The contractor should use a combination of area patching, crack repair and milling

before the overlayment. Properly milled pavement removes part of the existing pavement and permits the overlay to match the elevation of adjacent areas not subject to repaving. Milling also allows the contractor to make adjustments to the slope of the pavement to ensure proper drainage. The contractor should clean the milled pavement to ensure proper bonding of the new overlayment. We recommend an overlayment thickness that averages 1½ inches (not less than one inch or more than two inches). Variable thicknesses are often necessary to create an adequate slope for proper drainage. The contractor should identify and quantify areas of pavement that require area patching, crack repair and milling to help the Town compare proposed services.

Total replacement requires the removal of all existing asphalt. For area patching, we recommend the contractor use a rectangular saw cut to remove the deteriorated pavement. For larger areas such as entire parking areas or driveways, we recommend the contractor grind, mill or pulverize the existing pavement to remove it. The contractor should then augment and compact the existing aggregate and native soil to create a stable base. Finally the contractor should install the new asphalt in at least two lifts.

The time of replacement is dependent on the useful life, age and condition of the pavement. The useful life is dependent in part on the maintenance applied to the pavement, the amounts and concentration of auto solvents that penetrate the pavement, the exposure to sunlight and detrimental effects of inclement weather. St. Michaels should repair any isolated areas of deteriorated pavement periodically. The following table depicts our recommendation for asphalt pavement repaving:

Phase	Quantity (SY)	Recommended Year(s) of Total Replacement	Recommended Year(s) of Milling and Overlayment
I	10,800	Completed 2008	2029
II	8,060	Completed 2008	2029
III	7,170	Completed 2009	2030
IV	5,890	Completed 2010	2031
V	16,540	Completed 2014-2015	2035
VI	4,170	Budgeted 2017	2038
VII	12,520	2019	2039
VIII	20,660	2025-2026	2045-2046
IX	11,450	2028	2047

The estimates of cost depicted on Line Items 6.040 through 6.058 of *General Fund Reserve Expenditures* are based on historical information furnished to us by Management.

The Town should coordinate asphalt repaving with related activities such as partial replacements of *concrete curbs and gutters*, inspections and capital repairs to the *catch basins*, and partial replacements of *subsurface utility pipes*. Concrete curbs and gutters have a useful life of up to 65 years. We recommend the Town budget for partial replacement of up to five percent (5%), or 1,425 linear feet, of the total 28,500 linear feet of concrete curbs and gutters in 2017 and every four years thereafter. Concrete catch basins have indeterminately long useful lives with inspections and capital repairs every 15- to 20-years. The Town should anticipate phased inspections and capital repairs to the 81 catch basins beginning in 2017 and concluding by 2029. Subsequent phased activities are likely beginning by 2033 and concluding by 2045.

As mentioned previously, the Town is responsible for the subsurface utility pipes. The exact amounts and locations of the subsurface utility pipes were not ascertained due to the nature of the underground construction and the non-invasive nature of the inspection. We anticipate a useful life of up to and likely beyond 85 years. For budgetary purposes, we include an allowance for possible repairs by 2019 and every four years thereafter.

Other significant expenditures include replacement of the *asphalt pavement nature trail*. The nature trail was installed in 2010 and comprises 6,500 square yards of asphalt pavement walking paths. Walking path asphalt pavement is typically not as thick as parking area or street asphalt pavement. This type of pavement application has the potential for deterioration from tree roots, settlement and development of cracks. The need to maintain a safe pedestrian surface results in a useful life of 10- to 15-years for walking path asphalt pavement. We recommend the Town budget for total replacement of the nature trail by 2025 and again by 2040. We anticipate total replacement is likely to maintain a safe pedestrian walking surface.

Replacement of the *Honeymoon Bridge and covered bridge* at the nature trail are two additional significant expenditures included in the *Property Site Elements*. The Honeymoon Bridge was constructed in 2011 and the covered bridge was built in 2010. These wood structures have useful lives of up to 25 years. We recommend the Town budget for replacement of the Honeymoon Bridge by 2036 and the covered bridge by 2035.

The final significant expenditures in regards to the *Property Site Elements* include replacement of the *playground equipment at Back Creek, Clinton S. Bradley and Hollis Parks*. Safety is the major purpose for maintaining playground equipment. We recommend an annual inspection of the playground equipment to identify and repair as normal maintenance loose connections and fasteners or damaged elements. We suggest the Town learn more about the specific requirements of playground equipment at PlaygroundSafety.org. We recommend the use of a specialist for the design or replacement of the playground equipment environment. Playground equipment of this type has a useful life of 15- to 20-years. The Back Creek Park playground equipment was installed in 2010 and we recommend the Town budget for replacement of the equipment by 2029 and again by 2047. The playground equipment at Clinton

S. Bradley and Hollis Parks were replaced in 2000 and we recommend the Town anticipate replacement of the equipment by 2020 and again by 2038.

The times and costs of these repairs and replacements may vary. However, we judge the amounts shown on Line Items 6.020 through 6.820 of the *General Fund Reserve Expenditures* sufficient to budget appropriate reserves.

Vehicular and Maintenance Equipment Elements

The anticipated future expenditures of the Vehicular and Maintenance Equipment comprise \$1,986,455, or approximately eleven percent (11.3%) of the total *General Fund* future expenditures.



Backhoe



Chipper



Gator



Mowers



Police vehicles



Dump truck



Garbage truck



Public works vehicle



Roller



Sweeper

St. Michaels maintains numerous pieces of maintenance equipment and vehicles to maintain the common infrastructure and landscape. We worked with Management and maintenance personnel to evaluate the conditions, remaining useful lives and replacement costs of the vehicles. The times and costs of these repairs and replacements may vary. However, we judge the amounts shown on Line Items 7.100 through 7.950 of *General Fund Reserve Expenditures* appropriate to budget sufficient reserves.

Water Fund Elements



Arsenic treatment system and pump house #3 at Gloria Avenue



Arsenic treatment system and pump house #2 at Marengo Street



Arsenic treatment system vessels



Backwash tank – *Note long-lived*



Energy management system VFD device



Generator



North Talbot Street water tower



Woodside Avenue water tower

The most significant expenditures for the Water Fund Expenditures include *inspection, rehabilitation, and replacement of the water towers*. The Woodside Avenue water tower was constructed in 1981 and the North Talbot Street water tower was constructed in 1999. The water towers have a useful life of up to 65 years with the benefit of inspections and rehabilitation of the tanks every 10 years. St. Michaels budgeted for inspections and rehabilitation of the North Talbot Street tower in 2017. We recommend inspection and rehabilitation at the Woodside Avenue water tower in 2019. We also advise subsequent inspections and rehabilitation events for both water towers every 10 years thereafter, except when replacement occurs. We anticipate replacement of the Woodside Avenue water tower by 2040. Based on the age assumption of periodic maintenance, we do not anticipate replacement of the North Talbot Street water tower in the next 30 years.

Other significant expenditures include replacement of the *filter media systems* for the arsenic treatment systems. The Town maintains two plants, one on Gloria Avenue, known as Plant #3, and one on Marengo Street, known as Plant #2. St. Michaels underwent renovation of

both plants and the arsenic treatment systems in 2016. The filter media systems at Plant #2 utilize a green sand system and have a useful life of up to 10 years. The filter media systems at Plant #3 utilize an absorption system and have a useful life of up to three years. We recommend replacement of the Plant #2 filter media systems by 2026 and every 10 years thereafter. We recommend replacement of the Plant #3 filter media systems by 2019 and every three years thereafter.

The times and costs of these repairs and replacements vary. However, we judge the amount shown on Line Items 8.112 through 8.902 of the *General Fund Reserve Expenditures* sufficient to budget appropriate reserves.

Reserve Study Update

An ongoing review by the Town Management and Board of Directors, and an Update of this Reserve Study in two- to three- years are necessary to ensure equitable funding plans since a Reserve Study is a snapshot in time. Many variables change after the study is conducted that may result in significant overfunding or underfunding the reserve accounts. Variables that may affect the Reserve Funding Plans include, but are not limited to:

- Deferred or accelerated capital projects based on Town discretion
- Changes in the interest rates on reserve investments
- Changes in the *local* construction inflation rate
- Additions and deletions to the Reserve Component Inventories
- The presence or absence of maintenance programs
- Unusually mild or extreme weather conditions
- Technological advancements

Periodic updates incorporate these variable changes since the last Reserve Study or Update.

The Town can expense the fee for an Update with site visit from the General Fund reserve account. This fee is included in the General Fund Reserve Funding Plan. We base this



budgetary amount on updating the same property components and quantities of this Reserve Study report. Budgeting for an Update demonstrates the Board's objective to continue fulfilling its fiduciary responsibility to maintain the commonly owned property and to fund reserves appropriately.

5. METHODOLOGY

Reserves for replacement are the amounts of money required for future expenditures to repair or replace Reserve Components that wear out before the entire facility or project wears out. Reserving funds for future repair or replacement of the Reserve Components is also one of the most reliable ways of protecting the value of the property's infrastructure and marketability.

The Town of St. Michaels can fund capital repairs and replacements in any combination of the following:

1. Increases in the operating budget during years when the shortages occur
2. Loans using borrowed capital for major replacement projects
3. Level monthly reserve assessments annually adjusted upward for inflation to increase reserves to fund the expected major future expenditures
4. Special assessments

We do not advocate special assessments or loans unless near term circumstances dictate otherwise. Although loans provide a gradual method of funding a replacement, the costs are higher than if the Town were to accumulate reserves ahead of the actual replacement. Interest earnings on reserves also accumulate in this process of saving or reserving for future replacements, thereby defraying the amount of gradual reserve collections. We advocate the third method of *Level Monthly Reserve Assessments* with relatively minor annual adjustments. The method ensures that Town pay their "fair share" of the weathering and aging of the commonly owned property each year. Level reserve assessments preserve the property and enhance the resale value of the homes.

This Reserve Study is in compliance with and exceeds the National standards¹ set forth by the Community Associations Institute (CAI) and the Association of Professional Reserve Analysts (APRA) fulfilling the requirements of a "Full Reserve Study." These standards require a Reserve Component to have a "predictable remaining Useful Life." Estimating Remaining Useful Lives and Reserve Expenditures beyond 30 years is often indeterminate. Long-Lived Property Elements are necessarily excluded from this analysis. We considered the following factors in our analysis:

¹ Identified in the APRA "Standards - Terms and Definitions" and the CAI "Terms and Definitions".

General Fund Information Furnished by the Town	
2017 unaudited Cash Status of the General Fund Reserve Fund	8,574,049
2017 Budgeted General Fund Reserve Contribution	0
Anticipated Interest on General Fund Reserve Fund	97,980
Less Anticipated General Fund Reserve Expenditures	(818,050)
Projected 2017 Year-End General Fund Reserve Balance	\$7,853,979

Water Fund Information Furnished by the Town	
2017 unaudited Cash Status of the Water Fund Reserve Fund	329,076
2017 Budgeted Water Fund Reserve Contribution	0
Anticipated Interest on Water Fund Reserve Fund	3,433
Less Anticipated Water Fund Reserve Expenditures	(86,000)
Projected 2017 Year-End Water Fund Reserve Balance	\$246,509

The Cash Flow Method to compute, project and illustrate the 30-year Reserve Funding Plans

Local² costs of material, equipment and labor

Current and future costs of replacement for the Reserve Components

Costs of demolition as part of the cost of replacement

Local economic conditions and a historical perspective to arrive at our estimate of long term future inflation for construction costs in St. Michaels, Maryland at an annual inflation rate of 2.0%. Isolated or regional markets of greater construction (development) activity may experience slightly greater rates of inflation for both construction materials and labor.

The past and current maintenance practices of Town of St. Michaels and their effects on remaining useful lives

The Funding Plans exclude necessary operating budget expenditures. It is our understanding that future operating budgets will provide for the ongoing normal maintenance of Reserve Components.

The anticipated effects of appreciation of the reserves over time in accord with an anticipated future return or yield on investment of your cash equivalent assets at an annual rate of 1.20% (We

² See Credentials for addition information on our use of published sources of cost data.



did not consider the costs, if any, of Federal and State Taxes on income derived from interest and/or dividend income).

Interest rates on reserves are steady or increasing in concert with the certificates of deposit and money market rates. Overall, no material near term changes in savings rates are anticipated. Without significant differences in these savings rates, shorter term investments are the choice of many investors. We recommend consultation with a professional investment adviser before investing reserves to determine an appropriate investment strategy to maximize a safe return on reserve savings. The following table summarizes rates of inflation and key rates for government securities, generally considered as safe investment alternatives.

Interest Rate and Inflation Data	2015				2016			
	2015-1 (A)	2015-2 (A)	2015-3 (A)	2015-4 (A)	2016-1 (A)	2016-2 (A)	2016-3 (A)	2016-4 (F)
Average or Last Actual = (A)								
1-Year Treasury Bill	0.25%	0.27%	0.30%	0.65%	0.60%	0.55%	0.60%	0.55%
10-Year Treasury Note	1.90%	2.50%	2.70%	2.25%	1.80%	1.80%	1.85%	1.85%
30-Year Treasury Bond	2.55%	3.20%	3.40%	3.00%	2.65%	2.60%	2.60%	2.55%
Consumer Price Index (annualized rate)	0.00%	0.00%	0.00%	0.00%	0.10%	0.00%	1.15%	1.15%
Although past indicators are not predictive of future inflation in "building" construction, minimal inflation exists for past year Sept. 2015 to Sept. 2016 of approximately 1.7%.								
Savings Rates Results RANGE as found in http://www.bankrate.com	0.02 to 1.11%		Money Market Savings		0.15 to 1.35%		for 2-Year Certificate of Deposit	
	0.1 to 1.25%		1-Year Certificate of Deposit		0.15 to 1.50%		for 3-Year Certificate of Deposit	
Estimated Near Term Yield Rate for Reserve Savings				1.20%				
Est. Near Term Local Inflation Rate for Future Capital Expenditures				2.0%	11/04/2016			

Updates to this Reserve Study will continue to monitor historical facts and trends concerning the external market conditions.

6. DEFINITIONS

Definitions are derived from the standards set forth by the Community Associations Institute (CAI) representing America's 305,000 condominium and homeowners associations and cooperatives, and the Association of Professional Reserve Analysts, setting the standards of care for reserve study practitioners

Cash Flow Method - A method of calculating Reserve Contributions where contributions to the reserve fund are designed to offset the variable annual expenditures from the reserve fund. Different Reserve Funding Plans are tested against the anticipated schedule of reserve expenses until the desired funding goal is achieved.

Component Method - A method of developing a Reserve Funding Plan with the total contribution is based on the sum of the contributions for individual components.

Current Cost of Replacement - That amount required today derived from the quantity of a *Reserve Component* and its unit cost to replace or repair a Reserve Component using the most current technology and construction materials, duplicating the productive utility of the existing property at current *local* market prices for *materials, labor* and manufactured equipment, contractors' overhead, profit and fees, but without provisions for building permits, overtime, bonuses for labor or premiums for material and equipment. We include removal and disposal costs where applicable.

Fully Funded Balance - The Reserve balance that is in direct proportion to the fraction of life "used up" of the current Repair or Replacement cost similar to Total Accrued Depreciation.

Funding Goal (Threshold) - The stated purpose of this Reserve Study is to determine the adequate, not excessive, minimal threshold reserve balances.

Future Cost of Replacement - *Reserve Expenditure* derived from the inflated current cost of replacement or current cost of replacement as defined above, with consideration given to the effects of inflation on local market rates for materials, labor and equipment.

Long-Lived Property Component - Property component of Town of St. Michaels responsibility not likely to require capital repair or replacement during the next 30 years with an unpredictable remaining Useful Life beyond the next 30 years.

Percent Funded - The ratio, at a particular point of time (typically the beginning of the Fiscal Year), of the actual (or projected) Reserve Balance to the Fully Funded Balance, expressed as a percentage.

Remaining Useful Life - The estimated remaining functional or useful time in years of a *Reserve Component* based on its age, condition and maintenance.

Reserve Component - Property elements with: 1) Town of St. Michaels responsibility; 2) limited Useful Life expectancies; 3) predictable Remaining Useful Life expectancies; and 4) a replacement cost above a minimum threshold.

Reserve Component Inventory - Line Items in *Reserve Expenditures* that identify a *Reserve Component*.

Reserve Contribution - An amount of money set aside or *Reserve Assessment* contributed to a *Reserve Fund* for future *Reserve Expenditures* to repair or replace *Reserve Components*.

Reserve Expenditure - Future Cost of Replacement of a Reserve Component.

Reserve Fund Status - The accumulated amount of reserves in dollars at a given point in time, i.e., at year end.

Reserve Funding Plan - The portion of the Reserve Study identifying the *Cash Flow Analysis* and containing the recommended Reserve Contributions and projected annual expenditures, interest earned and reserve balances.

Reserve Study - A budget planning tool that identifies the current status of the reserve fund and a stable and equitable Funding Plan to offset the anticipated future major common area expenditures.

Useful Life - The anticipated total time in years that a *Reserve Component* is expected to serve its intended function in its present application or installation.



7. PROFESSIONAL SERVICE CONDITIONS

Our Services - Reserve Advisors, Inc. will perform its services as an independent contractor in accordance with our professional practice standards. Our compensation is not contingent upon our conclusions.

Our inspection and analysis of the subject property is limited to visual observations and is noninvasive. We will inspect sloped roofs from the ground. We will inspect flat roofs where safe access (stairs or ladder permanently attached to the structure) is available. The report is based upon a “snapshot in time” at the moment of our observation. Conditions can change between the time of inspection and the issuance of the report. Reserve Advisors does not investigate, nor assume any responsibility for any existence or impact of any hazardous materials, structural, latent or hidden defects which may or may not be present on or within the property. Our opinions of estimated costs and remaining useful lives are not a guarantee of the actual costs of replacement, a warranty of the common elements or other property elements, or a guarantee of remaining useful lives.

We assume, without independent verification, the accuracy of all data provided to us. You agree to indemnify and hold us harmless against and from any and all losses, claims, actions, damages, expenses or liabilities, including reasonable attorneys' fees, to which we may become subject in connection with this engagement, because of any false, misleading or incomplete information which we have relied upon as supplied by you or others under your direction, or which may result from any improper use or reliance on the report by you or third parties under your control or direction. Your obligation for indemnification and reimbursement shall extend to any controlling person of Reserve Advisors, Inc., including any director, officer, employee, affiliate, or agent. Liability of Reserve Advisors, Inc. and its employees, affiliates, and agents for errors and omissions, if any, in this work is limited to the amount of its compensation for the work performed in this engagement.

Report - Reserve Advisors, Inc. will complete the services in accordance with the Proposal. The Report represents a valid opinion of our findings and recommendations and is deemed complete. However, we will consider any additional information made available to us in the interest of promptly issuing a Revised Report if changes are requested within six months of receiving the Report. We retain the right to withhold a Revised Report if payment for services is not rendered in a timely manner. All files, work papers or documents developed by us during the course of the engagement remains our property.

Your Obligations - You agree to provide us access to the subject property during our on-site visual inspection and tour. You will provide to us to the best of your ability and if reasonably available, historical and budgetary information, the governing documents, and other information that we request and deem necessary to complete our Study. You agree to pay our actual attorneys' fees and any other costs incurred in the event we have to initiate litigation to collect on any unpaid balance for our services.

Use of Our Report and Your Name - Use of this Report is limited to only the purpose stated herein. Any use or reliance for any other purpose, by you or third parties, is invalid. Our Reserve Study Report in whole or part is not and cannot be used as a design specification, design engineering services or an appraisal. You may show our report in its entirety to those third parties who need to review the information contained herein. The Client and other third parties viewing this report should not reference our name or our report, in whole or in part, in any document prepared and/or distributed to third parties without our written consent. *This report contains intellectual property developed by Reserve Advisors, Inc. specific to this engagement and cannot be reproduced or distributed to those who conduct reserve studies without the written consent of Reserve Advisors, Inc.*

We reserve the right to include our client's name in our client lists, but we will maintain the confidentiality of all conversations, documents provided to us, and the contents of our reports, subject to



legal or administrative process or proceedings. These conditions can only be modified by written documents executed by both parties.

Payment Terms, Due Dates and Interest Charges - The retainer payment is due upon authorization and prior to shipment of the report. The final payment of the fee is due immediately upon receipt of the Report. Subsequent changes to the report can be made for up to six months from the initial report date. Any outstanding balance after 30 days of the invoice date is subject to an interest charge of 1.5% per month. Any litigation necessary to collect an unpaid balance shall be venued in Milwaukee County Circuit Court in the State of Wisconsin.

CONDITIONS OF OUR SERVICE ASSUMPTIONS

To the best of our knowledge, all data set forth in this report are true and accurate. Although gathered from reliable sources, we make no guarantee nor assume liability for the accuracy of any data, opinions, or estimates identified as furnished by others that we used in formulating this analysis.

We did not make any soil analysis or geological study with this report; nor were any water, oil, gas, coal, or other subsurface mineral and use rights or conditions investigated.

Substances such as asbestos, urea-formaldehyde foam insulation, other chemicals, toxic wastes, environmental mold or other potentially hazardous materials could, if present, adversely affect the validity of this study. Unless otherwise stated in this report, the existence of hazardous substance, that may or may not be present on or in the property, was not considered. Our opinions are predicated on the assumption that there are no hazardous materials on or in the property. We assume no responsibility for any such conditions. We are not qualified to detect such substances, quantify the impact, or develop the remedial cost.

We have made a visual inspection of the property and noted visible physical defects, if any, in our report. Our inspection and analysis was made by employees familiar with real estate and building construction; however, we did not do any invasive testing. Accordingly, we do not opine on, nor are we responsible for, the structural integrity of the property including its conformity to specific governmental code requirements, such as fire, building and safety, earthquake, and occupancy, or any physical defects that were not readily apparent during the inspection.

Our opinions of the remaining useful lives of the property elements do not represent a guarantee or warranty of performance of the products, materials and workmanship.

8. CREDENTIALS

HISTORY AND DEPTH OF SERVICE

Founded in 1991, Reserve Advisors, Inc. is the leading provider of reserve studies, insurance appraisals, developer turnover transition studies, expert witness services, and other engineering consulting services. Clients include community associations, resort properties, hotels, clubs, non-profit organizations, apartment building owners, religious and educational institutions, and office/commercial building owners in 48 states, Canada and throughout the world.

The **architectural engineering consulting firm** was formed to take a leadership role in helping fiduciaries, boards, and property managers manage their property like a business with a long range master plan known as a Reserve Study.

Reserve Advisors employs the **largest staff of Reserve Specialists** with bachelor's degrees in engineering dedicated to Reserve Study services. Our principals are founders of Community Associations Institute's (CAI) Reserve Committee that developed national standards for reserve study providers. One of our principals is a Past President of the Association of Professional Reserve Analysts (APRA). Our vast experience with a variety of building types and ages, on-site examination and historical analyses are keys to determining accurate remaining useful life estimates of building components.

No Conflict of Interest - As consulting specialists, our **independent opinion** eliminates any real or perceived conflict of interest because we do not conduct or manage capital projects.

TOTAL STAFF INVOLVEMENT

Several staff members participate in each assignment. The responsible advisor involves the staff through a Team Review, exclusive to Reserve Advisors, and by utilizing the experience of other staff members, each of whom has served hundreds of clients. We conduct Team Reviews, an internal quality assurance review of each assignment, including: the inspection; building component costing; lifing; and technical report phases of the assignment. Each Team Review requires the attendance of several engineers, Director of Quality Assurance and other participatory peers. Due to our extensive experience with building components, we do not have a need to utilize subcontractors.

OUR GOAL

To help our clients fulfill their fiduciary responsibilities to maintain property in good condition.

VAST EXPERIENCE WITH A VARIETY OF BUILDINGS

Reserve Advisors has conducted reserve studies for a multitude of different communities and building types. We've analyzed thousands of buildings, from as small as a 3,500-square foot day care center to the 2,600,000-square foot 98-story Trump International Hotel and Tower in Chicago. We also routinely inspect buildings with various types of mechanical systems such as simple electric heat, to complex systems with air handlers, chillers, boilers, elevators, and life safety and security systems.

We're familiar with all types of building exteriors as well. Our well versed staff regularly identifies optimal repair and replacement solutions for such building exterior surfaces such as adobe, brick, stone, concrete, stucco, EIFS, wood products, stained glass and aluminum siding, and window wall systems.

OLD TO NEW

Reserve Advisors experience includes ornate and vintage buildings as well as modern structures. Our specialists are no strangers to older buildings. We're accustomed to addressing the unique challenges posed by buildings that date to the 1800's. We recognize and consider the methods of construction employed into our analysis. We recommend appropriate replacement programs that apply cost effective technologies while maintaining a building's character and appeal.

QUALIFICATIONS

THEODORE J. SALGADO

Principal Owner

CURRENT CLIENT SERVICES

Theodore J. Salgado is a co-founder of Reserve Advisors, Inc., which is dedicated to serving community associations, city and country clubs, religious organizations, educational facilities, and public and private entities throughout the United States. He is responsible for the production, management, review, and quality assurance of all reserve studies, property inspection services and consulting services for a nationwide portfolio of more than 6,000 clients. Under his direction, the firm conducts reserve study services for community associations, apartment complexes, churches, hotels, resorts, office towers and vintage architecturally ornate buildings.



PRIOR RELEVANT EXPERIENCE

Before founding Reserve Advisors, Inc. with John P. Poehlmann in 1991, Mr. Salgado, a professional engineer registered in the State of Wisconsin, served clients for over 15 years through American Appraisal Associates, the world's largest full service valuation firm. Mr. Salgado conducted facilities analyses of hospitals, steel mills and various other large manufacturing and petrochemical facilities and casinos.

He has served clients throughout the United States and in foreign countries, and frequently acted as project manager on complex valuation, and federal and state tax planning assignments. His valuation studies led to negotiated settlements on property tax disputes between municipalities and property owners.

Mr. Salgado has authored articles on the topic of reserve studies and facilities maintenance. He also co-authored *Reserves*, an educational videotape produced by Reserve Advisors on the subject of Reserve Studies and maintaining appropriate reserves. Mr. Salgado has also written in-house computer applications manuals and taught techniques relating to valuation studies.

EXPERT WITNESS

Mr. Salgado has testified successfully before the Butler County Board of Tax Revisions in Ohio. His depositions in pretrial discovery proceedings relating to reserve studies of Crestview Estates Condominium Association in Wauconda, Illinois, Rivers Point Row Property Owners Association, Inc. in Charleston, South Carolina and the North Shore Club Associations in South Bend, Indiana have successfully assisted the parties in arriving at out of court settlements.

EDUCATION - Milwaukee School of Engineering - B.S. Architectural Engineering

PROFESSIONAL AFFILIATIONS/DESIGNATIONS

American Association of Cost Engineers - Past President, Wisconsin Section
Association of Construction Inspectors - Certified Construction Inspector
Association of Professional Reserve Analysts - Past President & Professional Reserve Analyst (PRA)
Community Associations Institute - Member and Volunteer Leader of multiple chapters
Concordia Seminary, St. Louis - Member, National Steering Committee
Milwaukee School of Engineering - Member, Corporation Board
Professional Engineer, Wisconsin (1982) and North Carolina (2014)

Ted continually maintains his professional skills through American Society of Civil Engineers, ASHRAE, Association of Construction Inspectors, and continuing education to maintain his professional engineer licenses.

JOHN P. POEHLMANN, RS
Principal

John P. Poehlmann is a co-founder of Reserve Advisors, Inc. He is responsible for the finance, accounting, marketing, and overall administration of Reserve Advisors, Inc. He also regularly participates in internal Quality Control Team Reviews of Reserve Study reports.

Mr. Poehlmann directs corporate marketing, including business development, advertising, press releases, conference and trade show exhibiting, and electronic marketing campaigns. He frequently speaks throughout the country at seminars and workshops on the benefits of future planning and budgeting for capital repairs and replacements of building components and other assets.



PRIOR RELEVANT EXPERIENCE

Mr. Poehlmann served on the national Board of Trustees of Community Associations Institute. An international organization, Community Associations Institute (CAI) is a nonprofit 501(c)(3) trade association created in 1973 to provide education and resources to America's 335,000 residential condominium, cooperative and homeowner associations and related professionals and service providers.

He is a founding member of the Institute's Reserve Committee. The Reserve Committee developed national standards and the Reserve Specialist (RS) Designation Program for Reserve Study providers. Mr. Poehlmann has authored numerous articles on the topic of Reserve Studies, including Reserve Studies for the First Time Buyer, Minimizing Board Liability, Sound Association Planning Parallels Business Concepts, and Why Have a Professional Reserve Study. He is also a contributing author in Condo/HOA Primer, a book published for the purpose of sharing a wide background of industry knowledge to help boards in making informed decisions about their communities.

INDUSTRY SERVICE AWARDS

CAI Wisconsin Chapter Award
CAI National Rising Star Award
CAI Michigan Chapter Award

EDUCATION

University of Wisconsin-Milwaukee - Master of Science Management
University of Wisconsin - Bachelor of Business Administration

PROFESSIONAL AFFILIATIONS

Community Associations Institute (CAI) - Founding member of Reserve Committee; former member of National Board of Trustees; Reserve Specialist (RS) designation; Member of multiple chapters
Association of Condominium, Townhouse, & Homeowners Associations (ACTHA) – member



ALAN M. EBERT, P.E., PRA, RS
Director of Quality Assurance

CURRENT CLIENT SERVICES

Alan M. Ebert, a Professional Engineer, is Director of Quality Assurance for Reserve Advisors. Mr. Ebert is responsible for the management, review and quality assurance of reserve studies. In this role, he assumes the responsibility of stringent report review analysis to assure report accuracy and the best solution for Reserve Advisors' clients.

Mr. Ebert has been involved with hundreds of Reserve Study assignments. The following is a partial list of clients served by Alan Ebert demonstrating his breadth of experiential knowledge of community associations in construction and related buildings systems.

Brownsville Winter Haven Located in Brownsville, Texas, this unique homeowners association contains 525 units. The Association maintains three pools and pool houses, a community and management office, landscape and maintenance equipment, and nine irrigation canals with associated infrastructure.

Rosemont Condominiums This unique condominium is located in Alexandria, Virginia and dates to the 1940's. The two mid-rise buildings utilize decorative stone and brick masonry. The development features common interior spaces, multi-level wood balconies and common asphalt parking areas.

Stillwater Homeowners Association Located in Naperville, Illinois, Stillwater Homeowners Association maintains four tennis courts, an Olympic sized pool and an upscale ballroom with commercial-grade kitchen. The community also maintains three storm water retention ponds and a detention basin.

Birchfield Community Services Association This extensive Association comprises seven separate parcels which include 505 townhome and single family homes. This Community Services Association is located in Mt. Laurel, New Jersey. Three lakes, a pool, a clubhouse and management office, wood carports, aluminum siding, and asphalt shingle roofs are a few of the elements maintained by the Association.

Oakridge Manor Condominium Association Located in Londonderry, New Hampshire, this Association includes 104 units at 13 buildings. In addition to extensive roads and parking areas, the Association maintains a large septic system and significant concrete retaining walls.

Memorial Lofts Homeowners Association This upscale high rise is located in Houston, Texas. The 20 luxury units include large balconies and decorative interior hallways. The 10-story building utilizes a painted stucco facade and TPO roof, while an on-grade garage serves residents and guests.

PRIOR RELEVANT EXPERIENCE

Mr. Ebert earned his Bachelor of Science degree in Geological Engineering from the University of Wisconsin-Madison. His relevant course work includes foundations, retaining walls, and slope stability. Before joining Reserve Advisors, Mr. Ebert was an oilfield engineer and tested and evaluated hundreds of oil and gas wells throughout North America.

EDUCATION

University of Wisconsin-Madison - B.S. Geological Engineering

PROFESSIONAL AFFILIATIONS/DESIGNATIONS

Professional Engineering License - Wisconsin, North Carolina

Reserve Specialist (RS) - Community Associations Institute

Professional Reserve Analyst (PRA) - Association of Professional Reserve Analysts



MATTHEW P. KSIONZYK, PRA, RS
Associate Director of Quality Assurance

CURRENT CLIENT SERVICES

Matthew P. Ksionzyk, a Civil Engineer, is an Associate Director of Quality Assurance for Reserve Advisors. Mr. Ksionzyk is responsible for the management, review and quality assurance of reserve studies. In this role, he assumes the responsibility of stringent report review analysis to assure report accuracy and the best solution for Reserve Advisors' clients. Mr. Ksionzyk has been involved with hundreds of Reserve Study assignments. The following is a partial list of clients served by Matthew Ksionzyk demonstrating his breadth of experiential knowledge of community associations in construction and related buildings systems.

Four Seasons Place - Located next to Boston Common, this condominium shares many common elements with the Four Seasons Hotel Boston. Built in 1985, this 16-story high-rise building includes 88 unique units with a brick masonry façade, flat roof systems, a health club and a parking garage.

Saint Mary's Catholic Church - This Jesuit parish is located in Lancaster, Pennsylvania and includes church/sacristy, rectory and school/convent buildings. Established in 1741, the present-day buildings were built from the mid-19th - to early 20th-centuries and comprise brick masonry façades and sloped slate and asphalt shingle roofs.

Azure - This 32-story high-rise was constructed from 2004 to 2007 and is located in Dallas, Texas. The building exterior comprises balconies, flat roofs, glass/metal curtain walls and a panelized stone masonry façade. The development includes plaza decks, a pool, water features and a subterranean parking garage.

Skyline Plaza - Located in northern Virginia, this community includes 957 units in twin 27-story buildings. Constructed from 1972 to 1977, the exteriors comprise balconies, flat roofs and masonry façades. The community includes common social/recreation rooms, a plaza deck, a pool and a parking garage.

Ronald McDonald House Toronto - Established in 1981, this Ronald McDonald House provides a "home away from home" for seriously ill children and their families. The current building was constructed from 2009 to 2011 and includes 81 guest suites. The four-story building comprises a flat roof, fiber cement siding, brick masonry, extensive interior common areas, a school and playground equipment.

Linden - This five-story, mixed-use residential/commercial property is located in Hartford, Connecticut, was constructed from 1892 to 1893, and was converted to a condominium from 1979 to 1981. The development includes a brick and brownstone masonry façade, flat roofs, detached garage buildings, asphalt pavement and an elevated garden.

Guard Hill - This townhome-style development is located in Westchester County, New York and consists of 212 units in 45 buildings. The buildings comprise asphalt shingle roofs, wood balconies and wood siding. This community includes private roads, three ponds, tennis and basketball courts, and a pool.

The Village of Kiln Creek - Located in southeast Virginia, this large-scale master association is responsible for the common elements shared by 31 subsidiary associations that comprise 2,918 residences. The community was built from 1988 to 2001 and consists of a clubhouse, pools, recreation facilities, maintenance facilities, an administrative office, asphalt walking paths, an irrigation system and lakes.

PRIOR RELEVANT EXPERIENCE

Before joining Reserve Advisors, Mr. Ksionzyk attended Clarkson University, in Postdam, New York, where he specialized in Infrastructure Engineering. After college, he was commissioned as an officer in the U.S. Army and served four years on active duty, including a 13-month deployment to Iraq in 2004 and 2005. While in the Army, Mr. Ksionzyk served as a branch detailed infantry officer and a logistical transportation officer.

EDUCATION

Clarkson University - B.S. Civil Engineering

PROFESSIONAL AFFILIATIONS / DESIGNATIONS

Engineer In Training (E.I.T.) Registration - New York

Professional Reserve Analyst (PRA) - Association of Professional Reserve Analysts

Reserve Specialist (RS) - Community Associations Institute



NICHOLAS R. JULIA, RS
Responsible Advisor

CURRENT CLIENT SERVICES

Nicholas R. Julia, a Civil Engineer, is an Advisor for Reserve Advisors. Mr. Julia is responsible for the inspection and analysis of the condition of clients' property, and recommending engineering solutions to prolong the lives of the components. He also forecasts capital expenditures for the repair and/or replacement of the property components and prepares technical reports on assignments. He is responsible for conducting Life Cycle Cost Analysis and Capital Replacement Forecast services and the preparation of Reserve Study Reports for condominiums, townhomes and homeowner associations.

The following is a partial list of clients served by Nicholas Julia demonstrating his breadth of experiential knowledge of community associations in construction and related buildings systems.

Community Homeowners Association of Lake Forest Nestled in a wooded area of Round Rock, Texas, this expansive property consists of 622 single family homes. The development contains a clubhouse, pool, tennis and basketball courts, playground and walking trails. The site includes asphalt pavement and parking area, a pond, and creek.

Fox Chapel Mews II Condominium Association An upscale seven story brick midrise building located in Pittsburgh, Pennsylvania containing 85 units. Residents enjoy amenities such as a party room, fitness center, indoor pool, library, guest suites and tennis court. There is also asphalt pavement parking, stone pavers and two heated parking garages on site.

River Hills Reserve Homeowners Association Located in Orange Park, Florida this exclusive gated community was built in 2003 and contains 99 single family homes. The entrance to the community includes metal gates, a barcode reader for resident access, an intercom system, and decorative brick pavers leading into the development.

Wyoming Glen Homeowners Association Located in Wyoming, Ohio this attractive community includes a total of 23 buildings of varying styles. The houses contain asphalt shingle roofs, modern brick veneer and vinyl siding. The residents' amenities include an upscale clubhouse with a fitness center and pool area complete with lounge seating.

Lake Petersburg Association This unique man-made lake community of 380 single family homes is located in Petersburg, Illinois. Components of the property include a community boat launch, dock, three tennis courts, a basketball court, two maintenance buildings, an office, and vehicular equipment. The Association also maintains the large earthen dam on the far side of the lake.

The Lofts at River Shores Modern mixed use midrise built in 2006 with 28 residential units located on the top two floors in West Bend, Wisconsin. Each floor contains open interior common areas that include lounges and tables for residents to relax and socialize. The building also has multiple lobbies and a two level concrete parking garage.

PRIOR RELEVANT EXPERIENCE

Before joining Reserve Advisors, Mr. Julia attended Marquette University in Milwaukee, Wisconsin where he attained his Bachelor of Science degree in Civil Engineering. His studies focused on transportation engineering and construction management engineering. Mr. Julia also worked for the Village of Libertyville as an intern engineer where he was responsible for the oversight of village projects.

EDUCATION

Marquette University - B.S. Civil Engineering

PROFESSIONAL AFFILIATIONS / DESIGNATIONS

Reserve Specialist (RS) - Community Association Institute



STEPHEN E. BRESKI, RS
Responsible Advisor

CURRENT CLIENT SERVICES

Stephen E. Breski, a Civil engineer, is an Advisor for Reserve Advisors. Mr. Breski is responsible for the inspection and analysis of the condition of clients' properties, and recommending engineering solutions to prolong the lives of the components. He also forecasts capital expenditures for the repair and/or replacement of the property components and prepares technical reports on assignments. He is responsible for conducting Life Cycle Cost Analyses and Capital Replacement Forecast services and the preparation of Reserve Study Reports for condominiums, townhomes, planned unit developments and homeowner associations. Mr. Breski frequently serves as the Quality Assurance Review Coordinator for all types of developments.

The following is a partial list of clients served by Stephen Breski demonstrating the breadth of experiential knowledge of community associations in construction and related buildings systems.

Council of Unit Owners of GrandView at Annapolis Towne Centre Condominium This 13-story high rise is located in Annapolis, Maryland. The 150 unit owners are responsible for the common elements and amenities of this property which include the social and fitness rooms, two bar areas, and a rooftop pool.

Gateway Business Center Condominium A unique commercial property located in Gainesville, Virginia, this four-building condominium project comprises approximately 190,000 square feet of retail space and provides users sale or lease opportunities.

LeMarin Unit Owner's Association Located on Lake Erie in Port Clinton, Ohio. This unique association maintains the common elements for 117 condominium owners. Amenities within this gated community include a clubhouse with an indoor pool, kitchen, fitness and social rooms, tennis courts, and a Marina.

Narrows Pointe Council of Unit Owners, Inc. This exclusive community situated in the middle of the Chesapeake Bay between Virginia and Maryland, is home to 19 duplexes which provide owners a scenic water view. These 38 unit owners maintain the exteriors of their fiber cement sided buildings along with permeable paver parking areas and three docks.

Seneca Forest Community Association A vintage community nestled within the wooded suburbs of Germantown, Maryland, Seneca Forest maintains over one and a half miles of asphalt pavement roads as well as half a mile of asphalt pavement walking paths.

Camelot Condominium Owners Association, Inc. This three building, four-story complex is located in the suburbs of Akron, Ohio. Built in the late 1960's to the early 1970's, this property is home to 70 condominium owners. Features of this community include indoor pools, a parking garage beneath the central courtyard and a community room.

PRIOR RELEVANT EXPERIENCE

Before joining Reserve Advisors, Mr. Breski worked for a private construction management company in Pittsburgh, Pennsylvania, where he was working as a cost estimator. Prior to working as an estimator, Mr. Breski also worked for the nation's largest provider of wireless infrastructure, where he assisted in the structural analysis of cell phone towers. Mr. Breski attended the Swanson School of Engineering at the University of Pittsburgh where he attained his Bachelor of Science degree in Civil and Environmental Engineering. His studies focused on structural engineering.

EDUCATION

University of Pittsburgh - B.S. Civil and Environmental Engineering

PROFESSIONAL AFFILIATIONS

Reserve Specialist (RS) – Community Association Institute
Engineer in Training (E.I.T.) – State of Maryland



DIXON P. DRUMHELLER
Responsible Advisor

CURRENT CLIENT SERVICES

Dixon P. Drumheller, an Engineer, is an Advisor for Reserve Advisors. Mr. Drumheller is responsible for the inspection and analysis of the condition of clients' property, and recommending engineering solutions to prolong the lives of the components. He also forecasts capital expenditures for the repair and/or replacement of the property components and prepares technical reports on assignments. He is responsible for conducting Life Cycle Cost Analysis and Capital Replacement Forecast services and the preparation of Reserve Study Reports for condominiums, townhomes and homeowner associations.

The following is a partial list of clients served by Dixon Drumheller demonstrating his breadth of experiential knowledge of community associations in construction and related buildings systems.

Red Hawk Lodge This upscale ski lodge located in Keystone, Colorado was built in 2000. The property includes 100 condominium units and amenities such as a pool, fitness center and parking garage. The building is comprised of asphalt shingle roofs, and wood and fiber cement siding.

Cascades Business Center Condominium Located in Sterling, Virginia, this property is comprised of 26 commercial units in six buildings. The buildings include thin brick veneer siding as well as EPDM roofs. The center was built between 2000 and 2001. The site includes asphalt pavement streets and concrete flatwork.

Mary Marshall Assisted Living Facility This property in Arlington, Virginia was built in the 1940's and converted to an assisted living facility in 2011. Mary Marshall comprises 52 units in one building. Asphalt shingle roofs and masonry veneer comprise the building exterior. The facility includes kitchens, dining and community areas, offices and a library.

Four Seasons at Gold Hill Homeowners Association A homeowners association in Fort Mill, South Carolina, Four Seasons at Gold Hill consists of 189 single family homes and 112 units in 33 townhomes style buildings. The community was constructed between 2002 and 2008, and includes a clubhouse, a tennis court and pools.

The Quarters This five-story condominium building was built in 1987 and contains 27 units and an on-site office. The building is located two blocks from the beach in Ocean City, Maryland and includes metal roofing, stucco walls, concrete balconies and an elevated pool. The site includes a parking garage.

Nyland Community Association Just outside of Denver, in Lafayette, Colorado, Nyland is a community association that is comprised of 42 homes and a community center. The community center contains a kitchen, offices, kid's room, guest rooms and a fitness center. The site includes carports, a greenhouse, a wood shop, concrete flatwork and asphalt pavement streets.

Cameron Grove Community Association Located in Upper Marlboro, Maryland, Cameron Grove consists of 735 units constructed between 1998 and 2008. The Association maintains asphalt pavement streets, various ponds and a clubhouse including indoor and outdoor pools, a ballroom, movie theater and sports lounge.

PRIOR RELEVANT EXPERIENCE

Before joining Reserve Advisors, Mr. Drumheller attended James Madison University in Harrisonburg, Virginia where he attained his Bachelor of Science degree in Engineering with minors in Math and Business. His studies focused on environmental engineering and engineering design. Mr. Drumheller also worked as an intern for Property Capital Inc. where he advised on renewable energy projects and obtained real estate financing for clients.

EDUCATION

James Madison University - B.S. Engineering

PROFESSIONAL AFFILIATIONS

Engineer in Training (E.I.T.)

RESOURCES

Reserve Advisors, Inc. utilizes numerous resources of national and local data to conduct its Professional Services. A concise list of several of these resources follows:

Association of Construction Inspectors, (ACI) the largest professional organization for those involved in construction inspection and construction project management. ACI is also the leading association providing standards, guidelines, regulations, education, training, and professional recognition in a field that has quickly become important procedure for both residential and commercial construction, found on the web at www.iami.org. Several advisors and a Principal of Reserve Advisors, Inc. hold Senior Memberships with ACI.

American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., (ASHRAE) the American Society of Heating, Refrigerating and Air-Conditioning Engineers, Inc., devoted to the arts and sciences of heating, ventilation, air conditioning and refrigeration; recognized as the foremost, authoritative, timely and responsive source of technical and educational information, standards and guidelines, found on the web at www.ashrae.org. Reserve Advisors, Inc. actively participates in its local chapter and holds individual memberships.

Community Associations Institute, (CAI) America's leading advocate for responsible communities noted as the only national organization dedicated to fostering vibrant, responsive, competent community associations. Their mission is to assist community associations in promoting harmony, community, and responsible leadership.

Marshall & Swift / Boeckh, (MS/B) the worldwide provider of building cost data, co-sourcing solutions, and estimating technology for the property and casualty insurance industry found on the web at www.marshallswift.com.

R.S. Means CostWorks, North America's leading supplier of construction cost information. As a member of the Construction Market Data Group, Means provides accurate and up-to-date cost information that helps owners, developers, architects, engineers, contractors and others to carefully and precisely project and control the cost of both new building construction and renovation projects found on the web at www.rsmeans.com.

Reserve Advisors, Inc., library of numerous periodicals relating to reserve studies, condition analyses, chapter community associations, and historical costs from thousands of capital repair and replacement projects, and product literature from manufacturers of building products and building systems.